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ABSTRACT

Described is a 1972 workshop designed to train Pennsylvania personnel in assessing and programing for low functioning or difficult retardates. State legislation dealing with education of the retarded is reviewed. Considered are assessment techniques in the following areas: motor, communication, cognitive, and social-emotional development and maladaptive behavior. Profiling an individual's development and establishing behavioral objectives for motor, self-help, communication, language, cognitive, and social emotional skills are discussed, and techniques of behavior modification, parent training, and programing for the blind, deaf, and multiply handicapped retarded are examined. Explored is the role of supportive personnel in programing for the low functioning child. The Mansfield Training Program for the severely and profoundly retarded is described, and evaluations of the workshop and training model are summarized. Also included are listings of approximately 100 references, workshop materials (including texts, films, and handouts), materials available from United Cerebral Palsy Associations, and workshop participants. (CL)

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TRAINING THE DIFFICULT RETARDATE

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Proceedings of a Workshop

conducted by

Department of Special Education

Temple University

Philadelphia, Pennsylvania

Summer 1972

This workshop was jointly sponsored and supported by the Office of Mental Retardation of the Commonwealth of Pennsylvania and the Department of Special Education of the Philadelphia Public School System.

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ACKNOWLEDGMENTS

As plans to prepare personnel to work with retardates previously excluded from school proceeded from formulation to fruition there was realization that training could not be complete within the short space of one month; however, orientation could be provided. To this end, a program was devised which furnished demonstration and practice in assessment and programming designed to meet the individual needs of retardates. Format for the workshop was devised by Bernice B. Baumgartner and Stanley Schneider, Office of Mental Retardation, Commonwealth of Pennsylvania; Floyd E. McDowell, Human Resources Development, Devon, Pennsylvania; Marvin Malcotti, Pennhurst State School; Dianne Manfredini, Philadelphia Association for Retarded Children; and Beth Stephens, Temple University. Support for the plan was furnished by Paul W. Eberman, Dean, and David H. Albaugh, Associate Dean, College of Education, Temple University.

Edward R. Goldman, Commissioner of Mental Retardation, Commonwealth of Pennsylvania, and Marechal-Neil Young, Associate Superintendent for Special Education, School District of Philadelphia, sponsored the workshop. Participants were employees of these two agencies.

George Gladis, Vanguard Schools, Dona Gordon, Western Michigan University, Patricia Murray, Montgomery County Intermediate Unit, Edith Nemeth, Elwyn Institute, Ruth Sower, Temple University, and David Wood, Philadelphia Association for Retarded Children, served as Assistant Directors. The authors of presentations which appear in this report discussed care training areas. Site for ongoing work with pupils were provided by Ken-Crest Centers for Exceptional Persons, Pennhurst State School, and Philadelphia Association for Retarded Children.

The skillful, cooperative contributions of each of these persons and agencies made it possible to prepare for the supervision and training of mentally retarded students who shortly were to experience their first days of public education. Now there was opportunity to provide that which previously had been denied.

Beth Stephens

FOREWORD

A major breakthrough in the education and training of mentally retarded children and youth within the context of a normal social system crystallized as a result of the Right to Education Consent Agreement. This breakthrough was accompanied by a major breakdown of a social system's long-learned behavior of stigmatising and scapegoating the mentally retarded.

Through the provision of program services to those retarded not enrolled in public school programs, Department of Public Welfare personnel utilized certain effective methods, techniques, and interventive procedures to "reach the lower functioning individual" enrolled in Departmental programs. Concurrently, the Education Department was also engaged in the delivery of education to specialized disability groupings. The Consent Agreement between the Department of Public Welfare and the Department of Education was the catalyst which precipitated coordinating both Departments' efforts and also afforded the opportunity to disseminate and share these strategies with other educators across the country.

By presenting our program to "train trainers" it is our hope that the suggestions and methods presented herein will be modified and improved through use so that every individual, regardless of his functional level, will receive an educational/training program appropriate to his needs.

Edward R. Goldman
Commissioner of Mental Retardation
Commonwealth of Pennsylvania

Stanley E. Schneider
Deputy Commissioner of
Mental Retardation
Commonwealth of Pennsylvania

FOREWORD

The Division of Special Education was privileged to serve as a sponsor, along with the State Office of Mental Retardation, for the summer 1972 workshop for training teachers expected to serve as leaders in programs of education and training of multiply-handicapped, retarded pupils.

The opportunity to enroll children previously non-attendant in public school, resulting from the Right to Education Decree, required that the teachers assigned to newly-organized classes be prepared for their duties. Although it was expected that these teachers would participate at a later time in the training of others, their first responsibility was to teach the initial eight classes for multiply-handicapped pupils, federally funded as a demonstration program. The scope of instruction, with stress upon practicum conducted in centers for severely retarded children, gave valued preparation and increased security to the teachers who completed the rigorous program.

Because the six weeks of instruction proved so stimulating, most of the participants have appealed for classroom observations by the consultants and a continuation of the seminars. Plans for both methods of in-service training will be implemented this school year.

The depth and quality of the leadership which Dr. Beth Stephens and the staff from Temple University gave to the workshop brought vitality to the course and increased commitment to the participating teachers.

The Division of Special Education of the School District of Philadelphia appreciates the opportunity of sharing in the very effective staff development program.

Marechal-Neil E. Young
Associate Superintendent
for Special Education
Philadelphia Public Schools

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SECTION I

INTRODUCTION, RATIONALE, AND METHODOLOGY

INTRODUCTION

Through court order, the Commonwealth of Pennsylvania recently was maddated to provide public education programs for retardates who previously had been excluded from school. Since this landmark decision, other states also have moved, either through legislation or litigation, to insure this right to all mentally retarded persons of school age. States which have not so moved may anticipate similar action in the near future. As a result, public educators throughout the nation have become aware of the need to prepare teachers and to devise programs for the previously excluded pupils. Special preparation was necessary because these pupils differ from the educable and trainable retardates now enrolled in public school classes. Generally, exclusion from school was not a capricious act on the part of school officials. Instead, it usually was a decision arrived at after consideration was given to the gains which were or were not accruing to the pupil through school attendance, and, also, the effect his presence had on the rest of the school system.

To describe the behavior characteristics of previously excluded pupils is impossible because they are a highly heterogeneous group. However, frequent causes for exclusion are low-level functioning, severe multiple handicaps, non-ambulatory, lack of language, not toilet-trained, and maladaptive behavior: e.g., self-mutilation, self-stimulation, withdrawn, autistic, distructive, and disruptive. To train these pupils is difficult, and special preparation is required for teachers who engage in the task.

Because Pennsylvania classes for previously excluded pupils were mandated to open in September 1972, there was little lead time to prepare the large number of teachers needed for these classes. Therefore, decision was made by the Office of Mental Retardation, Commonwealth of Pennsylvania, and the Department of Special Education, Philadelphia School District, to sponsor a four-week workshop at Temple University during the summer of 1972. The workshop was to prepare 60 trainers who had previous background in Special Education; in turn, these trainers (under the supervision of program coordinators) were to provide in-service training to teachers assigned to work with previously excluded pupils. Ideally, the workshop experience would have been provided to each teacher prior to her assignment. With some adaptation, the format used for the initial workshop for trainers could be used for one which sought to train teachers.

The approach used to meet the emergency need for teachers for previously excluded pupils is presented for the consideration of states faced with a similar situation. Through this exploratory effort, a model evolved which can be adapted for the use of specific institutions or agencies.

RATIONALE AND METHODOLOGY

Because the need for personnel trained to work with low-functioning or difficult retardates was immediate, the four-week workshop sought to acquaint

teachers, administrators, and supportive personnel with easily administered assessment devices whose results would provide program data, and to demonstrate the means whereby such data, when translated into training objectives, formed a sequential, developmental classroom program. If persons were to be afforded meaningful training, there was need not only to provide the concepts and theory of assessment and programming, but opportunity to implement the above in actual classroom situations. Accordingly, the training schedule was designed with an afternoon lecture/demonstration on a specific topic, followed by a morning on-site practicum which allowed the trainee to implement the demonstrated methods and techniques.

In light of the mentally retarded population to be served, five areas of assessment and programming received prime consideration: motor, language, cognitive, emotional/social development, and behavior management. Trainees were given nightly reading assignments, in correlation with topics to be discussed, from text-books and handouts as listed in Appendix A. Emphasis throughout the program was on locating a child developmentally within each area, and subsequently constructing a sequential, developmental training program.

Since many low-functioning children exhibit multiple handicaps, the trainees were exposed, via the afternoon sessions, to the techniques and theories of such remedial areas as physical therapy, occupational therapy, and developmental nursing. Additionally, in order to meet the needs of those persons engaged in programming for "crib-bound" or multiply-handicapped mentally retarded, lectures and field trips to existing programs were provided in these areas. Emphasis was also given to the training of parents and/or child-care personnel for optimum program implementation.

Specific objectives established for the workshop were:

1. Provide background information on legislation designed to create programs to meet the educational needs of retarded children, and also review the court mandate, "Right to Education Consent Agreement";

2. Promote understanding of motor, language, social/emotional, and cognitive development;

3. Establish ability to engage in behavioral assessment and analysis and to effect appropriate training and management strategies;

4. Develop and maintain programs commensurate with the needs of individual retardates;

5. Insure meaningful involvement of parents (or attendants) in achievement of training objectives, and thereby maximize program benefits as well as provide for program continuation;

6. Review instructional resource materials appropriate for staff development, and for the training of pupils and parents;

7. Supervise trainers as they construct training programs appropriate for their particular center or institution;

8. Select and/or develop techniques for evaluation of training programs;

9. Evaluate ability of trainers to develop and implement training models; such evaluation will require supervision by the Office of Mental Retardation during subsequent training programs.

Expectations for gains to emanate from the workshop, as expressed by the trainees, included:

1. acquisition of behavior management techniques;
2. methods of programming for non-verbal children;
3. toilet-training methodology;
4. structured experience with groups of low-functioning children;
5. a plan for in-service training;
6. programming techniques in motor, cognitive concepts, and self-help skills for the low-functioning child;
7. exposure to behavior modification techniques;
8. methods of working with parents, administrators, and professional personnel;
9. resource and materials information;
10. suggestions for program activities.

The combination of the above-named expectations and the previously-stated objectives served as focal points and "channel markers" for the total program.

The training day was scheduled from 8:30 A.M. to 4:30 P.M., five days per week. Morning sessions were held at the practicum sites, and began with a small-group (N=10) discussion of the previous day's lecture and demonstration. Small-group supervision was provided by the assistant directors. Each trainee was assigned to a specific child or group of children with whom approximately two hours a day were spent in actual implementation of assessment or program techniques. A brief seminar period concluded the morning activities. The total group (N=60) assembled for the afternoon program at 1:00 P.M.; this session, which usually consisted of a lecture and a demonstration, was followed by a question and answer period. A small-group (N=10) daily evaluation session marked the conclusion of the trainees' day. During this period each small-group, led by its own assistant director, made a critique of the day's program, discussed salient points and offered suggestions for areas which needed further development or alternate methods of presentation. Following the dismissal of the trainees, the workshop directors and assistant directors met for approximately one hour to review the trainees' performances and suggestions, and to formulate plans for the following day.

Since the workshop enabled the trainees to earn six graduate or undergraduate credits, a project paper was assigned. This paper was to include: (1) a developmental profile, and a program for the child or children with whom the trainee had been working, and (2) a proposal for in-service staff training of teachers employed by the trainee's sponsoring organization, based on the workshop model.

The total design of the workshop was such that the trainees followed a sequential program pattern, moving from assessment to programming, theory to practice. An overview of the format follows (see "Workshop Schedule").

WORKSHOP SCHEDULE (First Week)

A.M. Opening remarks; Introductions; Registration; Review of Schedule	Discussion of MH/MR Act; Discussion of Right to Education Consent Agreement	On-site practicum: Appraising Motor Development	On-site practicum: Assessing Language and Communication	On-site practicum: Appraising Cognitive Development
P.M. Overview of Facilities	Appraisal of Motor Development: Demonstration & Lecture	Appraisal of Language & Communications Skills: Demonstration & Lecture	Understanding and Appraising Cognitive Development: Demonstration & Lecture	Understanding Social & Emotional Development: Demonstration & Lecture

Second Week

A.M. On-site practicum: Observing social/ emotional patterns	On-site practicum: Assessing Behavior	On-site practicum: Modifying autistic-like, self-mutilative, and repetitive behavior	Practicum: Profiling	On-site practicum: Constructing Behavioral Objectives
P.M. Discussion and Demonstration: Techniques of Behavior Assessment & Analysis	Autistic-like, self mutilative, and repetitive behavior: Demonstration & Lecture	Profiling individual development: Demonstration & Lecture	Using profiles to establish behavioral objectives: Demonstration & Lecture	Programming for Motor Development: Lecture Programming for Self-help Skills: Lecture & Film

WORKSHOP SCHEDULE (Third Week)

A.M. On-site practicum: Devise & Implement Motor and Self-help Program	On-site practicum: Devise & Implement Communication Program	On-site practicum: Devise & Implement Cognitive Program	On-site practicum: Devise & Implement Social/Emotional Development Program	On-site practicum: Devise & Implement Behavior Management Program
P.M. Programming for Communicative Development: Lecture Developing Receptive Language: Lecture	Programming for Cognitive Development: Lecture & Demonstration	Programming for Social/Emotional Development: Lecture & Film	Behavior Programming: Lecture & Demonstration	Parent & Family Training: Lecture Role Definition & Function as Trainer: Lecture & Demonstration

Fourth Week

A.M. Demonstration: Parent Training	Special Interest Field Trips	Development of Training Proposals	Development and Evaluation of Participants' Training Proposals	Evaluation of Workshop Closing Luncheon
P.M. Programming for the Blind/Deaf Retardate: Lecture and Demonstration	Physical Therapy for the Low-Functioning Child: Lecture; Developmental Nursing: Lecture	Role Playing - Review of existing program for difficult retardates: Lecture & Slides		

The sections which follow contain the information presented to the trainees each afternoon, and, where applicable, commentaries on the practicum experience of the following morning.

EDUCATION OF RETARDATES: LEGISLATION AND LITIGATION

The Pennsylvania Mental Health and Mental Retardation Act of 1966 set the scene for the court decision of "Right to Education Consent Agreement", which, in turn, created the need for personnel trained to work with low-functioning or difficult retardates.

Peter P. Polloni, Executive Director of the Pennsylvania Association for Retarded Children, discussed the MH/MR Act and its implications. Joseph Lantzer, Director of the Office of Right to Education, then focused on the Right to Education mandate, its content and effects.

Floyd McDowell, President, Human Development Resources, reacted to the above presentations.

REVIEW OF PENNSYLVANIA LEGISLATION FOR EDUCATION OF RETARDATES

Peter P. Polloni, Executive Director
Pennsylvania Association for Retarded Children

In 1963, the late President Kennedy signed the Maternal and Child Health Care Bill which began the thrust for that decade. Through various comprehensive studies, efforts were begun to try to create an interleafing of agencies and departments of government to serve the needs of the people better. (In spite of the efforts to create coordination and cooperation, often there is still the spirit of resistance which, of course, cannot be in the interest of children; but, perhaps, we are moving to a more effective use of our resources.)

Through the sixties many of us spent innumerable hours in meetings and councils, developing parts of the Comprehensive Mental Health and Mental Retardation Plans. The several regional comprehensive plans were brought together, compiled and drafted into two documents for the Commonwealth of Pennsylvania: the Mental Retardation Plan and the Mental Health Plan.

After many drafts and several compromises, the State Legislature adopted the Mental Health and Mental Retardation Act of 1966. It was this plan which created the foundation on which broad-based community service programs could be built.

The Act designates an authority "to assure within the State the availability and equitable provision of adequate mental health and mental retardation services for all persons who need them, regardless of religion, race, color, national origin, settlement, residence, or economic or social status." (MH/MR Act, Art. II, Sec. 201(1))

Under this Act, contracts are made with the various counties throughout the Commonwealth. There are currently 41 MH/MR administrators. These administrators are responsible for the provision of such services as short-term inpatient care, consultation and education, after-care, rehabilitation and

training, interim care, and research and prevention, through the base service units serving each catchment area. These base service units then become responsible for comprehensive programming for the population they serve, and retain jurisdiction for those people from their service area even when institutionalization has occurred.

The Mental Health and Mental Retardation Act and its authority have given us the means and the mandate to identify the handicapped person at the earliest possible age. The Training Services of the MH/MR Act provide the opportunity to create services for "teaching or improving self-care, personal behavior, and social adjustment for persons with a mental disability. These centers may prepare children for attendance in special classes in public schools." (MH/MR Regulations 5200, 5226.12, p. 6)

In 1969, the Pennsylvania Association for Retarded Children focused on services presently being provided, and solicited the advice of counsel regarding problem areas. Five areas were examined:

1. the grievance of individual patients;
2. misuse of capital;
3. involuntary servitude within state schools and hospitals;
4. the right to education;
5. the right to treatment.

Subsequently, the decision was made to initiate, in the Eastern Pennsylvania United States District Court, a class action suit dealing with the right to education for all mentally retarded persons of school age. The Right to Education litigation and decisions have subsequently provided the basis for developing appropriate programs of education and training for all of the mentally retarded of school age.

Pennsylvania has had the opportunity to lead the nation and demonstrate to other states how to manage and develop the potential of all of its citizens, including even the most severely mentally retarded person. Now the question is whether or not we have the creativity, imagination, and ability to develop realistic objectives for all of the mentally retarded.

THE RIGHT TO EDUCATION MANDATE

Joseph Lantzer, Director
Right to Education Office

Essentially, the Eastern Pennsylvania United States District Court's mandate:

1. Establishes a "zero reject" system of free public education and training for mentally retarded persons between the ages of six and twenty-one years. NO SCHOOL DISTRICT MAY POSTPONE, TERMINATE, OR IN ANY WAY DENY THE RIGHT TO A PROGRAM OF FREE PUBLIC EDUCATION AND TRAINING TO ANY RETARDED CHILD.

2. Provides that no child's educational assignment may be changed without notice to the parents or guardians, and establishes that an opportunity

for a hearing regarding the appropriateness of the recommended changes must be granted to the parents or guardians.

3. ESTABLISHES THAT EVERY RETARDED CHILD CAN BENEFIT FROM A PROGRAM OF EDUCATION AND TRAINING no matter what label based on I.Q. (educable, trainable, or profoundly retarded) has been applied to the child.

4. ESTABLISHES THAT THE MENTAL AGE OF A FIVE-YEAR OLD CAN ONLY APPLY AS A CRITERION FOR CHILDREN ENTERING THE LOWEST REGULAR primary class above kindergarten and CANNOT BE APPLIED TO CHILDREN ENTERING SPECIAL CLASSES.

5. COMPELS parents to place the retarded child in a school program between the ages of 8 and 17.

6. PERMITS a mentally retarded child to enter school, if the parent elects, prior to age 8, and to remain in school beyond the age of 17, if the parent elects.

7. MAKES PUBLIC FUNDED PRE-SCHOOL PROGRAMS AVAILABLE TO MENTALLY RETARDED CHILDREN prior to 6 years of age wherever there is a public pre-school program for normal children prior to 6 years of age.

8. EXPANDS THE TERM "BRAIN DAMAGED" to include all mentally retarded children, thus making the retarded eligible for payment of tuition for day school and tuition and maintenance for residential school up to $4200.00.

9. DECLARES THAT A MENTALLY RETARDED CHILD, WHETHER OR NOT PHYSICALLY DISABLED, MAY RECEIVE A MINIMUM OF 5 HOURS PER WEEK OF HOMEBOUND INSTRUCTION, and also states that homebound instruction is the least desirable alternative to a classroom situation and must be re-evaluated not less than every three months.

10. REQUIRES THE RETARDED CHILD TO BE PLACED IN A PUBLIC PROGRAM OF EDUCATION AND TRAINING APPROPRIATE TO THE CHILD'S CAPACITY, and states that placement in a regular class is preferable to placement in a special class, and placement in a special class is preferable to placement in any other type of program.

The initial suit was filed on January 7, 1971, in the U. S. District Court, Eastern District of Pennsylvania. On 18 June 1971, the masters handed down the "due process" order which stated that a notification of changes in a child's program must be sent to the child's parents who, if they wish, may appeal the placement. The appeal process also applies if a parent feels that a child's program is inappropriate. In October 1971, the Federal Court handed down the final Consent Agreement between the Pennsylvania Association for Retarded Children and the Commonwealth of Pennsylvania. Several intermediate units appealed the ruling, and it was not until 5 May 1972 that the final decision, upholding the original consent agreement, was handed down.

It is interesting to note that, under the terms of the agreement, the Pennsylvania Association for Retarded Children reserved the right to go into court at a later day and argue for compensatory education time for those children previously denied admittance to public school.

The expansion of the definition of mental retardation to include all children functioning at a retarded level, regardless of the primary handicap, does pose some problems, particularly in relation to the black urban child and to the child who is emotionally disturbed. The key, however, is the stipulation that appropriate programming be provided.

In compliance with the consent agreement, the Commonwealth of Pennsylvania has developed two plans:

1. COMPILE (Commonwealth Plan for Identification, Location, and Evaluation): Under this plan, a state-wide "search" was begun to locate every mentally retarded child not currently in a public school program. These children were then evaluated by two committees: an evaluation team (composed of a psychologist, M. D., speech therapist, audiologist, social worker, and, where indicated, a psychiatrist) which was responsible for gathering all pertinent data on a child; and a recommendation team (consisting of a psychologist, curriculum specialist, and teacher) whose responsibility was for placement recommendations. After the evaluation of a child, the parents were notified of the team's recommendation, and were informed of their right to a hearing if they disagreed with the placement recommendation. A master sheet on each child was sent to the Office of Right to Education in Harrisburg, with areas of primary program needs indicated. These areas form the framework of the COMPET plan.

2. COMPET (Commonwealth Plan for Education and Training): 26 instructional areas, or modules, were established to correspond with the 26 needs which can be identified by the instruments used in COMPILE: e.g., gross motor development, self-help skills, etc. Each of these modules was broken down into sequentially ordered tasks applicable to the total spectrum of the retardate population: i.e., profound to educable. When a child is evaluated, areas which constitute the child's primary training needs are indicated. Decision concerning program placement is based on the facilities required to ameliorate these needs.

DISCUSSION OF PENNSYLVANIA'S PROVISIONS FOR THE EDUCATION OF RETARDATES

Floyd E. McDowell
Human Development Resources, Inc.

The Pennsylvania MH/MR Act of 1966 mandated that mentally retarded persons shall receive needed services and programs within their communities. A handout has been distributed which lists 26 service and program components needed by the mentally retarded along the cradle-to-grave continuum. This mandated comprehensive provision for the mentally retarded is the responsibility of the community Mental Health and Mental Retardation Centers which are now functioning throughout the Commonwealth. However, the legislation which mandates a comprehensive program also includes an all-purpose escape hatch. These MH/MR Centers are not required to provide mandated services unless funds are provided.

These MH/MR Community Centers are in various stages of program development. Initial funding was primarily for programs and services for the mentally ill. Additional funds now are being used by these Centers to develop their mental retardation programs. Educators and other personnel interested in programs of

education and human development should coordinate their efforts, wherever possible, with the Centers' offerings. This should be accomplished not only for maximum use of available resources, but to influence the philosophy and direction of programs provided by or through the MH/MR Centers. The vast majority of these Centers uses a medical or sickness model. We do need personnel and programs to serve the mentally or emotionally ill in our communities, as well as the mentally retarded who need mental health services. The challenge of mental retardation, however, is to foster personal and social growth and development. The mentally retarded and their families will not get their just share of funds and programs unless there is both advocacy and involvement by those who believe in the developmental model.

The Right to Education Consent Agreement of 1972 finally mandates appropriate action. This decision states that every mentally retarded child and youth between the ages of six and twenty-one will be provided an appropriate free public education. This provision must be in effect by 1 September 1972. If any School Districts provide free public education for children under the age of six, the mentally retarded children under six in these districts must also be given an appropriate educational program.

The tragic commentary of our times is the fact that educators have been responsible for policies and practices which have excluded mentally retarded children and youth from school programs. These children can learn and can reach varying levels of personal adequacy, social competency, and economic efficiency. It has taken a court decision to effect an all-encompassing policy which cares for all mentally retarded children and youth. Currently, it is both a challenge and an opportunity for educators to insert the moral rights of these children and youth into the now established legal rights foundation.

SECTION II

ASSESSMENT TECHNIQUES

The accurate evaluation of a mentally retarded child's abilities is a complex and challenging task, particularly in cases where children have multiple handicaps or lack attending and/or communicative skills. In these instances, intelligence quotients and mental ages do not provide the information needed for classroom programming. What is needed is a means of assessing the child's capabilities and learning modalities which then can be used to develop meaningful programs in each of the skill areas: i.e., motor language, social, and cognitive. Since many retarded children also exhibit inappropriate behaviors, methods to analyze and remediate such action also must be developed.

The initial workshop sessions were designed to acquaint the trainees with developmental assessments which could be administered and interpreted by classroom teachers, and which would provide the basis for training modules. The sessions opened with the presentation of pertinent background data and theory; following this, there was a demonstration of the assessment device.

APPRAISAL OF MOTOR DEVELOPMENT

Beth Stephens
Temple University

As a person progresses from infancy through early childhood into late childhood, he proceeds through sequential stages of motor development. The teacher must know at what stage the child currently is performing if individually appropriate motor activities are to be provided. Because most motor or physical activity is observable, people tend to be aware of these stages. In fact, a child's progress through the various motor milestones of his first two years generally is recorded by his parents: e.g., the age at which he first sits up, stands alone, takes his first step, and, later, walks. Often a parent's first first awareness of irregularities in his child's development stems from observed delays in the sitting-crawling-walking sequence.

Currently, there is available a variety of scales which outline motor development as it proceeds from birth through the sixth or seventh year. Their review reveals a necessary sameness of items because they all are scaling the same process. Some record change at more frequent intervals and in a greater variety of areas, but basically they are duplicative, one of the other. Later in this writing, separate review by Sower is given the Denver Developmental Survey, a widely accepted test devised by Frankenburg and Dodds (1969) to assess four behavior areas - gross motor, fine motor, adaptive language, and personal/social development - in children under six. Therefore, extended discussion is not presently accorded it. Instead, two additional measures are introduced. One, Fokes' Developmental Scale of Motor Abilities (Stephens, 1971), is probably the most comprehensive scale available. In order to present discrete evidence of the directionality of development from birth onward, she combines items from numerous reliable and valid scales (Bayley, 1935; Covert, 1964; Gesell, 1940, 1954; Gesell and Armatruda, 1941; Ilg and Ames, 1960; Halverson, 1933; Jersild, 1954; Shirley, 1933; Strang, 1959; Van Riper, 1963; and Watson and Lowrey, 1952). The resulting measure is a continuous

Table 1

FOKES DEVELOPMENTAL SCALE OF MOTOR ABILITIES

12 months to 18 months

Height: 28 in.
Weight: 20 lbs.

I. Characteristics of the Period
   A. Extremely active with little or no inhibition (Ilg & Ames, 1960)
   B. Mobile but unstable (Ilg & Ames, 1960)
   C. New scope to daily activities with new-found locomotor activities (Ilg & Ames, 1960)

II. Head and Trunk Posture
   A. Good control (Gesell, 1940)
   B. Good sitting balance (Gesell, 1940)
   C. Instability compensated by elevation of arms (Gesell, 1940)

III. Upper Extremities
   A. Reaching smooth and continuous (Gesell, 1940)
      1. Little or no error in securing object (Gesell, 1940)
      2. Hand ulnar-wardly flexed at wrist (Gesell, 1940)
   B. Grasping with wide open hand (Gesell, 1940)
      1. Grasps and manipulates long, slender object with fingers (Bayley, 1935)
      2. Opens wooden slide box and places tape inside (Shirley, 1933)
   C. Attempts to feed self
      1. Handles spoon (Bayley, 1935)
      2. Uses cup (Ilg & Ames, 1960)
   D. Marks with pencil (Shirley, 1933); rather bang than write (Gesell, 1940)
   E. Throwing - favorite pastime (Ilg & Ames, 1960)
      1. Hurls ball in various manners (Ilg & Ames, 1960)
      2. Poor aim (Ilg & Ames, 1960)
   F. Releasing difficult
      1. Poor aim (Gesell, 1940)
      2. Poor timing (Gesell, 1940)

IV. Lower Extremities
   A. Agile on flat surface (Ilg & Ames, 1960)
      1. Toddles (Gesell, 1940)
      2. Walks without support (Gesell, 1940)
      3. Walks sideways or backwards (Jersild, 1954)
      4. Walks and pulls toy (Covert, 1964)
      5. Pushes chair while walking (Gesell, 1940)
      6. Cannot turn easily (Gesell, 1940)
      7. Moves from sitting to walking (Gesell, 1940)
   B. Begins to climb (Ames, 1940); can climb and seat self in chair (Gesell, 1940)

V. Perceptual-Motor
   A. Unscrews jar lid (Shirley, 1933)
   B. Places tape in box (Shirley, 1933
   C. Stacks two blocks (Covert, 1964)
   D. Throws (Gesell, 1940)
   E. Feeds self (Ilg & Ames, 1960)

Stephens, 1971, pp 87-89

description of development: i.e., it contains a variety of items accomplished by the average child at each of the age levels listed. As with most motor scales, seven years is the upper age limit. Although there is a refinement and extension of motor skills and continued growth after this age, major motor development generally is accomplished by the child's seventh year. Items in the 12- to 18-month age level are presented as an example. (See p.

To become proficient in assessing motor development one must: (1) obtain background knowledge of motor development (Gesell, 1940; Espenchade and Eckert, 1967), (2) become familiar with motor development scales, and (3) select a group of children under seven years of age, observe what they do motorically, how they do it, and locate their performance on a motor scale. As you note their current performance levels in the various areas, there will be realization that irregularities exist. For example, a child may reach without exaggerated twisting of trunk and arm movements (two to three years), may grasp small objects and align fingers without touching the table top (three to four years), and may stand on one foot with help, but not alone on either foot (18 to 24 months) (Fokes, 1971). Yet, this child is not unusual; many children are more advanced in one motor area than in others.

However, a positive relationship has been found to exist between mental age and motor proficiency (Distefano, Ellis, and Sloan, 1958). Therefore, one would expect retardates frequently to exhibit delays in motor development. Work by Malpass (1960) and Tredgold (1937) provides confirmation. Also, lower functioning retardates tend to have a high incidence of multiple handicaps; often one of these is motoric. For these reasons a teacher of the mentally retarded must be prepared to analyze the motor activities of pupils assigned to her. If she is well-informed on motor development this can be accomplished during the child's everyday interaction with the environment.

When Smeets (Stephens, 1971) desired a quick, concise motoric appraisal, he followed Fokes' method: i.e., he selected items from reliable, valid scales and arranged them in longitudinal sequence. The age span embraced by his scale is 12 to 48 months. Four areas are assessed - gross motor, balance, eye-hand coordination, and manual dexterity - with seven items in each area. The measure is efficient when an abbreviated screening is desired of a child who functions within the age limits of one to four years. If irregularities are found, a more comprehensive scale, such as Fokes', also should be used. If, through use of the Smeets scale, it is found that a child's performance exceeds the 48-month level in some areas, another quick appraisal of motor integration and physical development is provided by Valett (1966). Again items from various developmental scales have been arranged in a two- to seven-year sequence.

As Fokes has noted: Anyone can use a scale, but its validity depends on the teacher's or specialist's capabilities in observing particular forms of behavior. This capability stems from knowledge of child development and simple experience in observing children. The best way to gain experience is to indulge in child-watching. Watch children, at school, on the playground, or wherever you come across them. Watch what they do and precisely how they do what they do.

The intelligent use of a motor scale also requires that the user have knowledge of the basic pattern of growth and development. Growth occurs in a cephalocaudal direction: i.e., from head to toe. One just does not see a

Table 2

Stephens, 1971, p. 158

SMEETS MOTOR DEVELOPMENT SCALE

Name:_____ Date_____ Sex_____ C.A._____

	GROSS MOTOR	BALANCE	ARM-HAND COORDINATION	MANUAL DEXTERITY
12M.	Walks, one hand held. (Gesell)	Stands alone. (Vineland)	Beats two spoons together at least 3 times. (Cattell)	Marks with pencil. Holds pencil in fist. (Cattell)
18M.	Walks, seldom falls. (Gesell)	Kicks large ball without holding wall. (Gesell)	Throws ball; any definite fling. (Merrill-Palmer)	Turns pages; 2-3 at once. (Gesell)
24M.	Walks upstairs alone. (Vineland)	Imitates standing on one foot. Lifts foot. No support (Merrill-Palmer)	Eats with spoon. (Vineland)	Attempts to fold paper. Any fold is a plus (Cattell, Merrill-Palmer) or Turns pages simply. (Gesell)
30M.	Jumps with both feet. (Gesell)	Walks on tip-toe. (Gesell)	Eats with fork. (Vineland)	Holds crayon by fingers. (Gesell)
36M.	Walks downstairs one step per tread. (Vineland)	Stands on one foot; Real balance for a moment. (Gesell)	Pours well from pitcher. (Gesell)	Closes fist and moves thumb. (Merrill-Palmer)
42M.	Jumps high, distance of 1 ft. to 25 inches. (Handout)	Stands on one foot for 2 seconds. (Gesell)	Puts on sweater. (P.M.S.)	Buttons coat or dress. (Vineland)
48M.	Walks downstairs, alternating feet last few steps. (Gesell)	Stands on one foot more than 4 seconds. (Gesell)	Throws ball overhand. (Gesell)	Opposition of thumb and fingers (one successful trial out of 3). Buttoning. (Merrill-Palmer)

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child with control of the trunk and extremities of the body before he has established a control of the head and neck muscles. This is obvious in the case of children with cerebral palsy. One does not expect to teach a child to sit up or to work with a pattern for sitting up until he has gained head and neck control.

It takes both experience and instruction for a teacher to be able to differentiate between the grasp reflex of early infancy, the palmar grasp used during the second six months of life, and the refined grasp that children eventaully acquire. The infant at twelve months may be adept in picking up objects, while close observation reveals his release to be difficult - really a voluntary kind of dropping action. The two skills are developed under different mechanisms and are not acquired simultaneously.

Intelligent use of scales can aid in determining a child's "motor age". More important, however, is the fact that scales provide information about previously acquired skills and indicate the directions that development will follow in the future.

Children who may be slow in other aspects may attain a degree of motor proficiency. Although slower rates of development or fixations in some stages may be noted among retardates, these children generally achieve motor skills unless physical handicaps, such as cerebral palsy, accompany the condition of retardation. In the case of deviate development, the tester should note both the level of operation and the rate of growth through the stages.

In summary, it should be remembered that motor control is the important characteristic of infancy and early childhood, and that its progress occurs in sequential fashion. (Fokes, 1971, in Stephens, pp. 72-73)

DEMONSTRATION: ASSESSMENT OF MOTOR SKILLS

The Smeets Scale and, where applicable, motor items from the Denver Developmental Survey, were presented to each of three children. The trainees were instructed to compare levels of development, and to note arrestation in development that arose from physical impairments. The children assessed were of varying ages and abilities: a 3-year-old mongoloid who exhibited no major physical handicaps; a 7-year-old with flaccid muscle tone plus gait and balance problems; and a 15-year-old who was cerebral palsied (hemiplegic) and who exhibited autistic-type behavior.

Each child was involved in activities which incorporated the skill area being assessed until his level of competency could be determined. At the conclusion of the demonstration, the child's motoric response patterns were discussed, and the trainees were given instructions for use of the motor scales the following morning.

UNDERSTANDING AND ASSESSING COMMUNICATION SKILLS

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The range of language capacity among the mentally retarded population varies considerably, and presents a rather complex picture. Intellectual and

language capabilities are intrinsically related: i.e., a certain degree of neurological development is required for handling the symbolic nature of language. The chances that the low-grade mentally retarded individual will speak on a mature adult level are rather slim. However, there is not a direct correlation between intelligence and language development; two individuals with comparable intelligence scores may vary greatly in their language behavior. Moreover, one with a lower IQ may be able to handle language with ease, while another with a higher IQ rating may be limited to a series of grunts and gestures. The picture presented, then, is one in which language is dependent upon a minimum level of intelligence, but which also is a special capacity in and of itself. Teachers of exceptional children are aware that in some children slowness in language acquisition is comparable to their overall development, while in other children specific language problems are exhibited although other areas of development are more advanced. This distinction is important in planning the habilitation of the mentally retarded. Children with specific language deficits present greater problems in training because their frustration stems from an inability to express themselves rather than from overall incompetence. The concern of this workshop, however, is for the language problems seen in the usual population of mentally retarded children rather than in those with specific language disability.

How important is language training for the mentally retarded? What is its perspective in the total habilitation program? The ultimate goal of any training program is the creation of productive and useful lives. Most programs for the mentally retarded are geared toward the development of socially adaptive and occupational skills rather than academic training. A prerequisite for the fulfillment of this goal is the ability to communicate linguistically with the members of their community. Without language, their entrance into community living is hampered and highly restricted. Use of language allows for the mentally retarded's growth in independence and expansion into adult life. Unknowingly, institutional programs have obstructed the speech of its inhabitants in order to maintain more regulated and routine living. This restriction of speech has only prolonged the necessity of custodial care.

The teacher of the mentally retarded can do much to encourage development of language within the planning of the overall program by incorporating special techniques within the daily activities. For greater understanding of what can be done, we must take a look at the nature of language and its acquisition.

A. <u>The Nature of Language</u>

A wealth of research since the late 1950's has added monumental dimensions to both linguistic and psycho-linguistic theory. The study of linguistics produces a theory of language or grammar, while psycho-linguistics is concerned with the study of the language-user and the meanings derived from language. The linguistic mode of humans surpasses the communication systems of animals in that language allows man to go beyond the here and now. The symbolic nature of language allows man to recount events of the past, speculate on the future, and to abstract ideas on the basis of concrete and isolated events. The linguistic code is expressed through a system of arbitrary acoustic and articulatory sound events. An analysis of these sound events illustrates that there is nothing intrinsically related in the sounds produced and

the actual object or idea. For instance, there is nothing intrinsically within the word "read" to mean the verb "read", nor with the sound of the word "book" to the object "book", nor with the word "road" as a path for conveyance. The linguistic capacity of humans allows for the interpretation of such symbolic events. Language is more than articulatory events or vocabulary, however. It is composed of a grammatical system that relates sound to meaning. Interpretation is based not on vocabulary items, but the grammatical relations among items within a sentence. Thus, we can produce and interpret the sentence "Read the book", but not "Read the road". However, we will accept the grammatical sequence of "Read the road sign".

Language does not require the memorization of sentences, but allows for the creation of an infinite variety of utterances, all of which may be novel in nature. Man is able to produce and understand sequences never heard before. Language, then, is not the result of the imitative powers of man, but appears to be expression of a specific and highly developed capacity that is peculiar to humans. Young children acquire this capacity by 3½ years on the average, which is long before they are able to handle other types of symbolic and abstract behavior. Not only do they learn language with amazing rapidity, but with ease and little effort on their part. Learning comes about without any special tutelage or instruction. In fact, the speech they hear is frequently distorted, fragmented, incomplete, and full of errors. From their speech community, however, they are able to process the linguistic information given them and to learn the grammar of their language. This observed capacity has induced researchers to state that the possibility for learning language is an endowment peculiar to man.

B. Language Learning

The learning of language appears to result from the child's innate capacity for the development of a linguistic code. Given exposure to a specific language, the child will learn to speak and comprehend that code although he has the processes available for learning any language. The adult system is acquired over a period of time before it is eventually mastered. During early childhood, the child processes and organizes linguistic information and produces speech on the basis of his grammatical development at the time. The observed "errors" in his speech are not described as fractured adult speech but child grammar at his stage of development. With further development he restructures and modifies his grammar until it matches the adult model. Modification in the adult model appears as the child is able to differentiate hierarchical categories in the language system. His language changes from highly diffuse global categories to differentiated and specific sub-categories of the adult grammar.

The acquisition of language reflects the syncretic nature of children. They see their world as a mass of undifferentiated parts. Their responses are global in nature. This is observed in the early utterances of young children in the single word stage. A single word is used to express a whole thought, and at different times may be used to express a multitude of meanings. This may be seen in the child's use of "mama" for the expression of any care-taking activity, possession, or personal attributes. Another example is that of calling any four-legged animal a "dog". Progress in development occurs as the child is able to break down these categories into more explicit sub-divisions.

C. Competence and Performance

Psycho-linguistics approaches language usage from two points of view. Competence refers to the underlying knowledge of language, while performance is the actual usage of language. Competence can never be measured, in that there is no method for the evaluation of one's complete knowledge. Performance can be measured through the observation of speech and comprehension. Performance reflects one's competence in language, but is bound by external and internal events. Performance may be bound by short auditory memory span, poor discrimination, fatigue, or external factors such as noise or disruption in the environment. Poor performance does not always signify a lack of competence. For instance, a child may have difficulty in following speech, but be able to produce his own utterances; or a child may be able to comprehend without the ability to produce speech. Although there is no way to speculate upon the limits of language competence, observations may be made in the investigation of language performance. Assessments of speech production and comprehension can be based upon what is known about normal acquisition of speech and language. Since speech and language follow an orderly sequence in development, the evaluator may compare the speech and language performance of his student to that of normal children. Events have been scaled in order to denote the stage at which a child is operating linguistically. Ages may also be specified as the onset of different stages, although it should be emphasized that there is considerable variance in ages among children for the acquisition of different levels of performance. Identification of the age or stage of development may serve in diagnosis of the overall problem of the mentally retarded as well as aid in program planning for language training.

D. Assessment of Language Skills at Early Stages of Development

The primary focus for this workshop is on the non-verbal child or the child with very little language. Thus the later stages of grammatical development will not be discussed.

1. Pre-linguistic Stage: The first 12 months of life make up the pre-linguistic period for most children, and consists of random sound-making with the articulatory mechanism. Vocalizations are devoid of specific meanings, although babblings and cooings reflect pleasurable moods of the infant as opposed to crying behavior. The psycho-linguists ascertain that this period is totally unrelated to linguistic development and the later capabilities of the child for using sounds as symbols of language. Certain attributes are important and may be significant in the diagnosis of language problems. Characteristically, infants do babble, and the absence of babbling may indicate an auditory or neurological disorder. Failure of auditory feedback reduces the infant's tendency to babble. He may babble for a time, but then quit because of lack of stimulation. Children with such histories should have audiometric evaluations.

a. Breath Group: One of the first developments during infancy is the establishment of the breath group. Vocalizations occur as the modification of the rhythmic respiratory cycle. Breathing normally occurs at seventeen cycles per minute, or faster, in infants. Vocalizations, which typically occur on exhalations, would occur in staccato-like fashion if normal

breathing were retained. Modification of the breathing cycle occurs early in life; hence, the infant is able to produce sustained vocatizations on one exhalation of air. With no modification of the breath stream, spasmodic wails or the "cat cries" of the severely demented may be heard. Such a problem is of great magnitude, and suggests extremely limited development. This behavior should be distinguished from the short phonation time of the motorically disturbed, such as the cerebral palsied.

b. Intonation: Sound-making during infancy is random and unintentional. During the second half of the first year the infant's babblings begin to take on the intonation features of the language to which he is exposed. This period reflects the imitative ability of infants in mimicry of overall patterns. The infant's mastery of the melody of the language indicates his overall awareness of speech patterns as opposed to other sounds. His sound-making, as yet without phonetic or meaningful content, gives indication of his syncretic nature. He copies the overall speech pattern without differentiation of the phonetic elements. The presence or absence of intonational patterns should be noted in pre-verbal children.

c. Echolalic Speech: Some intonational utterances result as imitations or echoes of the speech of others. True echolalic speech is the immediate reproduction of speech heard although some echo-like speech may be the recall of previously heard speech. Although the speech may be clearly intelligible, it is devoid of meaning and is non-linguistic in nature. Children vary in their use of echolalic speech. Some pass through full-blown periods, while others do not. Some may use it compulsively, while others derive pleasure from it through vocal play. Echolalia may extend well into the linguistic period: i.e., some children continue echoing for a long period after they have developed intentional speech. While echolalia may be considered a natural stage in pre-linguistic development, an extension of the period with no intentional speech is indicative of problems in the child's ability to process speech. He has mastered the melody, but has been unable to relate meaning to sound. The child is able to carry out the motor act of speech, but cannot tie content to his utterance.

Pure echolalia is the complete repetition of an utterance, while mitigated echolalia involves some change in the repetition, usually of person. For example, "Wash your hands" may be repeated as "Wash my hands". Some repetitions also include replies: "Are you sleepy?" may be repeated as "I sleepy? Yes." Both types of echolalia indicate a continued problem in comprehension. There are distinctions between the two, however. While pure echolalia may be completely devoid of meaning, the mitigated form indicates some interpretation of the speech signal, but with the requirement of a longer period for comprehension. Mitigated forms may serve as rehearsal periods to aid short term memory by allowing for the holding of the utterance in the memory long enough for interpretation. Some children also seem to use the mitigated form as a desire for affirmation, such as "You may have a cookie" repeated as "I may have a cookie."

The teacher may attempt to reduce pure echolalia after an extended period and replace it with more concentration on the auditory signal itself. The teacher may look for instances in which the pure form is being transformed into mitigated echolalia. The training of the later variety should always allow time for the child to process the linguistic infor-

mation with which he seems to be having difficulty. Tests given after children have mastered language show that children using extended periods of echolalia score more poorly on IQ tests than children without excessive echo speech.

d. Comprehension: It is generally believed that comprehension precedes production. The earliest distinction is the discrimination between speech-noise and other types of noise. During the pre-linguistic stage, the child may comprehend verbalizations globally. The persons, the speech act, the situation, all serve as cues for interpretation. The infant may know he is about to be fed because mother has remarked "I'm cooking your dinner", plus he sees her in the kitchen, hears pots and pans rattle, and feels hunger pangs in his stomach. He uses the conglomerate for interpretation, rather than words or grammatical relations of language. He sees only the whole, rather than the parts that make it up.

e. Gestures: Prior to the linguistic stage, children use gestures to express themselves. Usually, this is no more than repeated pointing at the topic under consideration. At times, grunts accompany pointing behavior. Gestures are abandoned as the child masters his language unless he has difficulty in expression. Intricate systems of pantomime are built by some children who exhibit problems in speech production but apparently have an underlying competence for language. Intonation markers, along with gestures, serve to distinguish emphatics from questions. The use of gestures becomes uneconomical after speech is acquired; the child then abandons this non-linguistic mode of communication. Children persist in use of gestures when no other mode is open to them. Teachers should be aware that gestures for some children are the only techniques for communication that is available to them. Teacher restriction of gestures may serve to inhibit and frustrate such children in their development. However, children should certainly be encouraged to use verbalization when they are able. In assessment of non-verbal children, the teacher should note the use and practicality of their gestures. The lack of gestures by non-verbal children indicates their unawareness of any social attempt at communication.

2. Linguistic Stage: The onset of the linguistic stage is not an event, but a process which cannot be specifically pinpointed in time. The first verbalization occurs when the infant produces systematic phonetic content that represents something meaningful in his world. It may happen that the child is using a word meaningfully that is not being interpreted by the parents; more commonly, parents are inclined to read meanings into the child's babblings before he has established the relation. Because of these factors it is difficult to specify the arrival of the first word.

a. Single Words: Beginning speech attempts appear as single word utterances, known as holophrastic speech. The word expressed by the child represents sentence-meaning, rather than a simple issuance of labels. The word serves as topic of the sentence, and sentence meaning may vary, dependent upon the situation. The child's language or word usage is diffuse and undifferentiated. For instance, "doggie" may mean "I see a dog", "The dog ran in the house", or whatever the situation demanded. Intonational markers serve to differentiate emphatic-like sentences from questions of statements.

The type of words children generally acquire first are noun-like words. Nouns are more expressive of content, and sentence meanings may be intrinsically related to nouns. For instance, intrinsic within the meaning of "banana" is "eat", while the same may not be said for the verb. Some verbs and adjectives are also acquired, but they do not have the same function in child grammar as in adult grammar. For instance, "go" may be used to signify the departure of a car. "Pretty", an adjective, may be used to denote objects, such as pins, earrings, rings, etc. At this stage, all word forms, whether adult nouns, verbs, or adjectives, are in the same word class in the child's grammar. The child is able to use the words from this class in the creation of his sentences.

In assessment, the teacher should look for the unique meanings expressed by the child's single word utterances. If expressions occur only as labelling devices, the child has not progressed through the first major step of language acquisition. Words as labels were learned only as imitations rather than for expression of meaning.

In training, the teacher must recognize that language occurs in relation to an on-going activity through which meanings can be expressed. Words should not be taught as labels, but as the manifestation of a number of different thoughts.

(1) Phonemic Content: In the production of the first words, the child uses sounds made by the articulators in a systematic fashion. Prior to this time, sound-making was random. First words characteristically contain a consonant/vowel opposition. With the arrival of speech, the child also makes his first large discrimination in his phonemic system by contrasting a closed oral cavity for consonant production as opposed to a wide open cavity for vowel production. Syllable forms are frequently duplicated to produce words such as "Mama", "Baba", Dada", or "Tata". Some children who are slow in language acquisition fail to produce this opposition. The effect is that of "vowel" talk which is largely unintelligible and restricted in usage. In assessment, the teacher should look for the articulatory points of contact in producing a consonant/vowel sequence. In training, the teacher may attempt to instill the concept of obtaining closure within the oral cavity for production of consonant/vowel sequences. The teacher should be careful that she does not work on individual sounds as in articulation therapy, but on words containing a consonant/vowel sequence. Words that children naturally acquire first contain this sequence, such as "mama, daddy, doggie, cookie, big, ball, block, book, etc."

b. Two-word Stage: After a period of holophrastic speech, children develop a primitive grammatical form involving two or more words. This stage enables differentiation in his language system, and allows for the use of novel expressions. The sentences may sound as if they are telegraphic adult speech restricted by auditory memory span, but researchers indicate that the child has developed his own primitive grammatical system which is not simply a reduction of adult speech. One might hear sayings such as "two boot", "mommy purse", "doggie run", "my hat", which cannot be explained on the basis of reduced adult grammar alone.

During this stage, children begin to be able to relate past

events and give descriptions of present activities, as well as show some comprehension of the future. None of these is indicated by use of verb tense markers, however.

Expansion in child speech takes place in the form of differentiation of grammatical categories. After a time, subject-verb relations are established; these are heard in sentences such as "My truck crash", or "My hand hurt". Forms are not always used, but are implicit in nature. For instance, "Smoke pipe" may be interpreted as "Daddy smokes a pipe" since he is the only one in the household who does. "Am" may be lacking from "I hungry" in that it is implicit within the sentence.

In general, subject-verb relations in simple active declarative sentences are acquired. Questions, negations, passives, imperatives, etc., which vary from the declarative form do not occur until later. There is evidence that the child has difficulty in interpretation of other sentence forms as well. Other grammatical features, such as verb tense, plurals, comparatives, affixes, etc., are acquired at later dates.

Of these forms, the present progressive is the first to be acquired. Plurals are established at a later point. Their evidence in the child's grammar is noticeable when he regularizes the numerous nouns of English, such as "foots" or "feets" for "feet". Such irregularities should be noted because they indicate the child's understanding of the regular rules of his language.

Questions of young children maintain simple sentence structure. One may hear "See doggie?", "Daddy come?", or "What his name is?" Negatives are frequently attached to sentences to give "No me eat" of "No want". The child travels through many stages before he finally acquires the adult rules.

In assessment, a log of the child's utterances will enable the teacher to pick out features that the child is using. In training, it is essential that the teacher use simply structured sentences to provide language models for the child. (This also will promote his language comprehension.) It may be emphasized that the teacher must product correct adult models rather than repeat the child's incorrect efforts as feedback. She must accept and praise the child's speech attempts, however. Since the present progressive is the first tense that is acquired, it is suggested that sentences using this tense be provided as models. Once the models are presented, the teacher may "break-down" the sentence to the topic word. In the reverse, the teacher may begin with a topic word and "build-up" a sentence.

Examples include:
Teacher response (break-down):
I am cutting paper.
Am cutting paper.
Paper.
Child's response:
Paper.
Teacher:
Yes! I am cutting paper.

Teacher response (build-up):

Hands.

Am washing hands.

I am washing hands.

Child's response:

Wash hand.

Teacher:

Yes! I am washing hands.

This technique will provide the structure that mentally retarded children require for processing language. It should reduce the load required of them in every-day class-room speech. The language heard becomes more systematic while the build-up and break-down allow for additional time in comprehension.

DEMONSTRATION: UNDERSTANDING AND ASSESSING COMMUNICATION SKILLS

The examiner, with the assistance of the classroom teacher, assessed the language level of three children, using the Fokes Scale of Language Acquisition. Two of the children had limited verbal ability, one was able to make spontaneous sounds, the other could formulate some words. The third child was non-verbal. The examiner gave no gestural cues, thereby maximizing the possibility of obtaining an accurate language level.

One of the tasks involved presentation of toys - a dog, a horse, and a cow - to the child. He was asked to "Show me the ....." while the examiner held each toy animal. (NOTE: questions starting with "Where is....." and "Do you have any....." are more difficult developmentally than "Show me....") The examiner then took the toy cow and, while saying "The cow is running", moved the cow across the table. The child was then asked to use a toy dog and imitate the activity as the examiner stated "The dog is running." Next, the examiner used a plastic fence to make an enclosure. She placed the cow in the pen, and said, "The cow is in the pen. Put the dog in the pen."

A cup, a plate, and a spoon were next presented to the child. He was asked the name of each, and to show, gesturally, the use of each.

Stress was placed on the necessity of sitting close to the child, providing him with manipulative objects, and describing, in the present tense, the actual activity.

The examiner then conducted a group analysis of the responses.

In the morning session following Fokes' presentation, a group of workshop participants prepared a Language Development Scale based on items from Fokes' Developmental Scale of Language Acquisition, The Denver Developmental Screening Test , and The Vineland School Maturity Scale. The resulting screening device quickly provides a brief overview of language development. If deficits are noted, the more specific appraisal available through use of more detailed scales is indicated.

LANGUAGE DEVELOPMENT SCALE

Prepared from items drawn from:
Fokes Developmental Scale of Language Acquisition
Vineland Scale of Social Maturity
Denver Developmental Screening Test
Valett Developmental Survey

Birth to 3 months

1. respond to a sound (bell)
2. throaty sounds
3. sounds other than crying
4. looking and/or smiling when approached
5. vowel-like sounds

3-6 months

1. turn to sound 8" or closer
2. appearance of consonant sounds
3. babbles using series of syllables
4. different sounds for pain and pleasure
5. imitates speech sounds
6. look for deafness if above things missing at this age, or absence of sound
7. motor response accompanies language

6-9 months

1. makes sounds in response to others
2. repetition of sounds for pleasure
3. non-specific da-da, ma-ma
4. activity stops when no-no or name is heard
5. beginning of intonation

9-12 months

1. imitates sounds such as cough, tongue click
2. response to intonation
3. specific sounds (correct or incorrect) are attached to specific objects
4. more consonants and vowel sounds

12-18 months

1. vocabulary understanding greater than production (speak 1-3 words)
2. specific words attached to specific objects
3. responds to command
4. words used as labels
5. holophrastic

18-24 months

1. 2-word phrases
2. 20-100 word vocabulary
3. others begin to understand
4. naming of objects in books

24-30 months

1. inappropriate use of negative
2. phrases get longer (3-5 words)
3. demands response from others
4. able to speak before he acts
5. use of "me" to indicate self
6. asserts self through speech

30-36 months

1. can tell name, first and last
2. intonation of speech more appropriate
3. relates experiences
4. whispers

36-42 months

1. language versatility
2. 900-word vocabulary
3. speech still relates all objects to self

Prepared by Workshop Participants:

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ASSESSMENT OF COGNITIVE DEVELOPMENT

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As one works with difficult retardates, and notes their responses to people and things - and they DO respond, although the response may be only a slight fleeting smile or frown, a flicker of the eyelid, a brief visual tracking of an object, or intensification of already apparent withdrawal - there is realization that some thought processes are in action. In most instances their cognitive development supersedes that of a neonate, yet because it is difficult to elicit their responses to standard test items, they frequently are regarded as untestable, and are treated as though they operate from an intellectual vacuum. Credit must go to Woodward (1959) for the initial realization that the level of intellectual development attained by these persons could be determined by appraising their behavior in terms of Piaget's stages of cognitive development. While working with the severely retarded at Fountain Hospital in London, she found older children engaged in rather bizarre behavior: they were engrossed in observing their hand movements, an activity commonly termed "finding their hands". This is an activity which normally occurs in infants in the age range one-to-four months, and which Piaget terms "primary circular reactions". Further observation by Woodward indicated that, indeed, other aspects of the behavior of these same children were at this stage. The level of cognitive development achieved by children previously regarded as untestable had been ascertained.

Before enlarging upon the use of Piagetian assessments to diagnose reasoning in the retarded, a brief review of the theoretical framework from which they evolved seems appropriate. Appraisal of cognitive development by Jean Piaget, a Swiss psychologist, has revealed it to be an on-going sequential process which occurs from birth to maturity.

Piaget's emphasis is on adaptation as intelligence develops from the continuous interaction between a person and his environment (people and things). The interaction is indicated in an outward adaptive coping and inward mental organization. Thus, the process of adaptation and organization results in constant reorganization of the structures of the mind, a reorganization which involves two complementary processes:

1. Assimilation which corresponds to inner organization, and occurs when an organism incorporates something from his environment into his mental structures.

2. Accommodation, or outer adaptation, which serves as a complement to assimilation, and occurs when environmental conditions require coping which necessitates a modification, revision, or rearrangement of existing mental structures of "schemas".

As the child proceeds through life, inwardly organizing or assimilating and outwardly coping or accommodating to environmental experience, he becomes more capable in his adaptations. Thought is elaborated and organized. Such is the generation of the mind. (Stephens, 1971, pp. 46-47)

Because Piaget sought to determine the origins of intelligence, he analyzed cognitive growth and found four major stages of intellectual development occur between the neonates' simple reflex activity and the adults' ability to engage in abstract or formal thought. These stages are presented in Table 3.

Stage I - Sensory Motor Operations

During this period earlier reflexive actions, such as arm-waving, grasping at objects which touch the palm, and sucking, become coordinated and generalized. An object's permanence is discovered. There is increasing awareness that things outside the field of vision can be returned. Relationships are established between objects that are similar and between objects that are dissimilar. The six sensory-motor substages are:

1. Reflexive. A shift occurs in the neonate's ready-made reflexive schemata. Active groping replaces passive release and is most noticeable in the sucking schema. Sucking becomes generalized and may even include the edge of the blanket. Later in the substage, if sucking is not followed by swallowing, groping starts again.

2. Primary Circular Reactions. As new associations are formed, experience begins to dictate the type of action. The first acquired adaptations are noted in the variations of reflexive actions. As hand movements become something to look at, and something heard becomes something to see, reciprocal coordination appears. Hunt (1961) comments that although the eye follows what the hand does, the hand does not realize the eye sees. Interest is in the movement itself, and not in the effect which that movement produces. If a chance-made action proves interesting or satisfying, it is repeated. As the infant sucks, saliva collects on his tongue; he enjoys playing with it so he lets it accumulate again and repeats the process. When these responses become repetitious they are termed circular reactions. Imitation will occur only if the model starts by imitating the child.

3. Secondary Circular Reactions. During this period there is a limited anticipation of effect. Chance-made movements producing an effect on an object are repeated intentionally. The infant may shake his legs and in so doing move a bassinet; as the bassinet moves, the doll on the hood swings; the infant sees the doll swing, so the kicking action is repeated. Also, the meaning of an object becomes assimilated. A rattle is shaken, a noise results, so repeated shakes occur. Although there is awareness that the means (shaking) begets the end (noise), the differentiation between the two is not understood. Inappropriate means are frequently applied to a situation (Hunt, 1961). The child waves paper and it rattles; later he may get a spoon in his hand and wave it as he expects it to rattle also. Objects acquire pemanence as limited but active search is made for things absent. A spatial field is constructed as looking becomes coordinates with grasping and arm movements become coordinated with sucking. Imitation is limited to sounds and movements which are a part of the child's repertoire and which are visually or auditorily perceptible to him.

4. Coordination of Secondary Schemata. Observation of a child's behavior indicates means are definitely differentiated from ends. Discovery of an independent universe is made: i.e., the "me" is discriminated from the

TABLE 3

PIAGET'S STAGES OF INTELLECTUAL DEVELOPMENT

Stage and Approximate Age	Characteristic Behavior
I. Sensory-motor operations	
1. Reflexive (0-1 month)	Simple reflex activity; example: kicking
2. Primary Circular Reactions (1-4.5 months)	Reflexive behavior becomes elaborated and coordinated; example: eye follows hand movements.
3. Secondary Circular Reactions (4.5-9 months)	Repeats chance actions to reproduce an interesting change or effect; example: kicks crib, doll shakes, so kicks crib again.
4. Coordination of Secondary Schema (9-12 months)	Acts become clearly intentional; example: reaches behind cushion for ball.
5. Tertiary Circular Reactions (12-18 months)	Discovers new ways to obtain desired goal; example: pulls pillow nearer in order to get toy resting on it.
6. Invention of New Means through Mental Combinations (18-24 months)	Invents new ways and means; example: uses stick to reach desired object.
II. Pre-operational	
1. Preconceptual (2-4 years)	Capable of verbal expression, but speech is repetitious; frequent egocentric monologues.
2. Intuitive (4-7 years)	Speech becomes socialized; reasoning is egocentric; "to the right" has one meaning - to HIS right.
III. Concrete Operations (7-11 years)	Mobile and systematic thought organizes and classifies information; is capable of concrete problem solving.
IV. Formal Operations (11 years upward)	Can think abstractly, formulate hypotheses, engage in deductive reasoning, and check solutions.

"not-me" (Hunt, 1961). Clear demarcation of adaptive behavior occurs. The child will remove an undersired object (hand) standing in the way of a desired one (bottle). Attempts are made to duplicate speech sounds and to imitate movements observed in others. New models are included in imitative actions although imitation may be inaccurate: e.g., the child may open and close his mouth as he attempts to replicate another person's eye wink.

5. Tertiary Circular Reactions. Action is no longer merely repetitious or chance-made. Objects are of interest in themselves, and are the cause of active experimentation. If things accidentally fall, the child purposefully lets them fall again in order to watch the act. Interest is not only in the object but what can happen to it; there will be active pursuit of a ball which has rolled under or behind something. There also is a subordination of means to an end, and the constructive elements which characterize intelligence are displayed. If a toy is placed on a cushion the child will grasp the cushion and pull it toward himself in order to grasp the object. Assimilation and accommodation become clearly differentiated, and imitative behavior closely approximates the model.

6. Invention of New Means through Mental Combinations. Awareness of relationships is sufficiently advanced to permit deductions. Piaget's classic example concerns a child's attempt to extract a watch chain from a slightly opened matchbox. After initial trials to obtain the end of the chain, the child stops, looks attentively at the slit in the matchbox as she opens her mouth wide, wider, then still wider; following this she slowly enlarges the drawer opening - wider, wider, and still wider - until she can put her finger in the matchbox drawer and pull out the chain (Piaget, 1960). Deferred imitation (imitation of absent persons, etc.) presages symbolism at this period.

Origins of intelligence lie in the sensory-motor period, which Hunt likens to a slow-motion film in which pictures are viewed in succession, but without the continuous vision necessary for understanding the whole. Although sensory-motor intelligence is intelligence in action, it is not reflective. Three essential conditions for transition from sensory-motor to the reflective level are:

1. Increase in speed which allows knowledge of successive phases of an action to be integrated into a simultaneous whole.

2. An awareness of the actual mechanisms of an action; thus, awareness of the nature of a problem aids in obtaining a solution.

3. Increase in conceptual distances which permit actions to go beyond the limits of near space and time.

Throughout life the perceptions and practical sets of sensory-motor intelligence lie at the source of thought.

Stage II - Pre-operational

1. Preconceptual. Following initial symbolic functioning which makes language acquisition possible, a period starts in which symbolic and preconceptual thought develops. The child becomes capable of educing a signifier, a word or image, which serves as a symbol for the significate, some

perceptually absent object or event. Through use of symbols it becomes possible for thought to consider the interplay or grouping of separate past, present, and future events. Also, at this level the child initiates imitative play. Piaget views imitation as a form of accommodation. As the child becomes more adept at imitation, it is possible for him to engage in internal as well as external imitations. A mental image, which is internal imitation, constitutes the signifier or word. At this level, the child who earlier opened her mouth wider and wider in imitation of the possible widening of the matchbox drawer, would reduce this imitation to a schematized image from which use of the signifier or word would arise. Through symbol or language usage thought becomes socialized, and from socialization a necessity arises to justify egocentric reasoning. The child attempts to think about his own thinking (Flavell, 1963). As a child, at this level of development, views an object or event he tends to center major regard on one outstanding feature to the neglect of others. The weight of two balls of clay may be compared and found equal, yet when the child sees one of the balls rolled into a long sausage shape he tends to say the long object weighs more. He fails to decenter, to consider width as well as length. Stable equilibrium between assimilation and accommodation has not been achieved.

The type of primitive reasoning characteristic of the preconceptual child is termed transductive; it is neither inductive nor deductive, but proceeds from particular to particular. A child at this age may attempt to smoke a white piece of chalk because it resembles a cigarette. Regard is addressed only to the physical appearance of the object to the neglect of classifying one as a writing instrument, the other as something to smoke. Another characteristic of this period is the inability to distinguish play and reality as different realms which possess different rules.

2. Intuitive Thinking. A gradual coordination of relations leads the child from a preconceptual or symbol acquisition stage to one in which these symbols or words may be manipulated in operational thought. Although processes are often rapid, the intelligence remains prelogical. Reasoning is intuitive. Even though the child observes two small glasses, A and B, identical in size and shape, and each filled with an equal number of beads, and in turn observes as the beads from glass A are emptied into another glass A_1 which is taller and narrower, he tends to conclude that the quantity of beads has changed. A_1 contains more than B because "it is higher". Concomitant to this statement may the admission that no beads have been added or removed.

Error is perceptual in nature. Thinking is influenced by what is seen at that given moment. Attention is centered on height relations, and width is ignored. However, if the beads from B are emptied into another glass B_1, then into another B_2, the two being successively taller and thinner, a point will be reached when the child will reply "there are fewer because it is too narrow". The ability to "decenter", address regard to two aspects, height and width, rather than centering on height alone, becomes possible only when reasoning gives simultaneous respect to both relations.

Stage III - Concrete Operations

From infancy onward, objects or events are classified, compared

for similarities or differences, located in space or time, evaluated or counted. These cognitive classifications, seriations, or systems of explanation are termed "groupings", and they last throughout a person's life. As reality is assimilated to intelligence, equilibrium of the assimilatory framework is maintained by grouping.

The integrated, intellectual system achieved through grouping is used by the child in organizing and manipulating the surrounding world. The thought structure makes possible such intellectual operations as addition, subtraction, multiplication, division, comparing classes and relations of objects and events, measurement of time and space, as well as operations which involve systems of values and interpersonal interaction. The distinguishing characteristic of the mobile equilibrium which promotes grouping is that thought is no longer centered on a particular state of an object, but can follow successive changes through various types of detours and reversals.

Grouping also permits reversibility: i.e., if $B=B_1$ and $B_1=B_2$, then $B_2=B$, or if 4+5=9, then 9-5=4. In addition to these logico-arithmetical operations, there are groupings which generate time and space. Also, operational groupings require social life. Without cooperation and interchange of thoughts with others, operations could never be grouped into a coherent whole.

Because the operations involved at this stage are constantly tied to action, they are concrete, not formal, operations. Children at this stage may be incapable of these processes if there is no manipulation of concrete objects: i.e., if reasoning involves only verbal propositions.

Stage IV - Formal Operations

Achieved in most children around their twelfth year, formal operations are comprised of a stage of intellectual equilibrium which has been evolving since infancy. As this transition is completed, observation no longer directs thought, as it did in the concrete period; instead, thought directs observation. With abstract thought the adolescent extends consideration beyond the present, and forms theories. He becomes capable of hypotheses, and reasons deductively. Reasoning with reality involved concrete groupings. Formal thought invokes reflection on these groupings and is, therefore, operating on operations. (Stephens, 1971, pp 48-55)

Currently it is realized that one of twentieth century psychology's most important contributions has been Piaget's demonstration that cognitive development proceeds through a series of hierarchical stages. His concern has been with the sequence of cognitive development and in defining criteria for classifying behavior (Woodward, 1971). Efforts by Inhelder extended his findings to the diagnosis of reasoning in the retarded, and, following this, Woodward demonstrated uses of Piagetian stages in assessing cognitive development in the severely subnormal, whereas Stephens (1969, 1972) analyzed differences which occur when the development of reasoning in normals is compared with that of retardates. The Piagetian diagnostic method is particularly useful in assessing lower-functioning retardates; here interest is not in a two-digit IQ figure, but in determining the individual's stage of cognitive development in order that developmentally appropriate activities may be provided him as attempt is made to assist him in progressing to the next higher level of functioning.

Information on Piaget's first period of development can be gained from very withdrawn or highly disturbed children. All that is necessary is for the child to want some object, then to have the object placed in a position that requires the child to solve a problem in order to obtain it: e.g., use a nearby stick to push a toy towards himself, or turn a toy to get it through bars of a play pen, or look under one, two, or more covers or screens for a toy that has been covered from view. Woodward holds that to describe as severely subnormal a child whose cooperation cannot be obtained is a comment on the examiner and his techniques rather than a statement about the intelligence of the child.

Through use of Piaget's hierarchical scale, individuals who previously have been viewed as an undifferentiated group, whose performance is more than -3 SD's from the mean, can be differentiated. Uzgiris and Hunt's measure, An Instrument for Assessing Infant Psychological Development (Uzgiris and Hunt, 1964), can be adapted for use with older severely retarded subjects who appear to be functioning at a sensory-motor level. For criteria, Uzgiris and Hunt have selected situations which are easily elicitable and measurable, which are described by Piaget in his writings on the sensory-motor period, and which can be reliably observed by different people. The six series of behavioral schemata which comprise the instrument are:

Series I. Visual Pursuit and Permanence of Objects: This series begins with the ready-made schema of looking. The first accommodations of this schemata are manifest in the pursuit of slowly moving objects held at a constant distance from the infant's eye. This is followed by "lingers with glance on the point where a slowly moving object disappeared." Later the infant "obtains a partially hidden object"; still later he may obtain an object hidden under one or two screens (or layers of material or paper).

Series II. Development of Means for Achieving Desired Environmental Events: The second series begins with commonly observed "hand-watching behavior". Piaget described the development of hand-watching as an assimilation of the manual schema by the visual schema. With coordination comes the ability to grasp. The development of intention comes out of the feeling of effort in reaching for desired objects. From this development, the series proceeds to clearer evidence of intention in the differentiation of means and ends. The series starts with observed hand-watching behavior and proceeds to "grasps objects when both hand and object are in view", to "grasps without hand being in view", on through a series of accomplishments to such actions as "uses string as means to obtain object (pull toy) after demonstration", and later "without demonstration", and on to "uses stick to reach object".

Series III. Development of Schemas in Relation to Objects: The series begins with the appearance of coordinations between the schema ready-made at birth, such as sucking, to coordination between the manual schema and sucking (hand-mouth coordination or thumb sucking) to the schema of bringing objects in front of the eyes in order to look at them. Later such schemas as hitting, patting, shaking, etc., develop. Attending to objects leads to examination of them, which provokes interest in novelty; then social interaction is observed as the schema of showing becomes evident. Later there is recognition of objects expressed in naming.

Series IV. The Development of Causality: Development begins with the infant's attempts to hold on to desired inputs and may be viewed as branching from Series II, Development of Means for Achieving Desired Environmental Events. Initially, hand-watching behavior is observed; later the infant keeps an object active by means of secondary circular reactions; several steps later he seeks to continue an interesting performance by touching the performing agent; still later he "recognizes another person as an independent causal agent by giving back an object to have it activated again" - e.g., a musical top; and at an even later stage he "activates a mechanically operated object after demonstration".

Series V. The Construction of the Object in Space: As the infant coordinates the schemata of looking and listening, he begins to localize sounds and their sources; things heard become things one can find and look at. Later he begins to reconstruct the trajectory of objects. Items on the scale include "localizes the source of sound", "follows the trajectory of a rapidly moving object", "recognizes the reverse side of objects", "understanding of gravity shown by permitting an object to roll down an incline", "makes detours in order to retrieve objects from behind obstacles".

Series VI. Development of Imitation: The series consists of two sections, one pertaining to vocal and the other to gestural imitation. The vocal series begins with the ready-made schemata of vocalizing. With the developing interest in novelty, the infant also starts to imitate unfamiliar sound patterns, at first by gradual approximation, and later by direct imitation. The infant progresses to imitate words which are within his vocabulary, and systematically repeats practically all new words.

The gestural series follows a similar progression. The infant begins to imitate simple gestures (hand waving), and later progresses to the imitation of unfamiliar gestures which he can watch himself perform (stretching his leg out straight), and to gestures which he cannot watch himself perform: i.e., facial gestures such as winking his eye.

(Training the Developmentally Young. Stephens, B., 1971, pp 57-59)

An assessment comparable to the Uzgiris/Hunt measure has yet to be devised for the preoperational stage, a stage which normally occupies the period from approximately two to seven years. Persons working in the field of retardation are acutely aware of the needs for instruments which assess this stage because the severely and moderately retarded generally do not develop beyond this period. Although Educational Testing Service has announced the development of procedures - Cognitive Growth in Pre-school Children (Melton, Charlesworth, Tanaka, Rothenberg, Busis, Pike, and Gollin, 1968) - which measure areas previously identified by Genevan research as prime contributors to the intellectual development of the pre-operational child, there is no reported effort to extend use of these procedures to retardates. A listing of the areas of pre-operational thought which are covered by the instrument and of the methods used in their appraisal follows:

1. Classification Skills are measured by a series of tasks designed to tap preferential sorting, ability to abstract a common property of two objects, and ability to sort when presented with a verbal clue...

2. Time is assessed by a time sequence task which was designed to measure the young child's understanding of time as represented in a pictorial sequence...

3. Distance understanding is assessed through use of a pegboard frame on which are taped two paths to a three-dimensional model of a school-house; one path is straight, the other crooked; the child predicts which of the two routes involves more traveling...

4. Number Conservation. A set of objects is placed in a row before the child (A). Then an equivalent parallel row is constructed (B). Each element of set "A" is directly in line with the corresponding element of set "B". The child is asked if there are as many objects in row "B" as in row "A". Next the visual cues to the one-to-one correspondence of elements are destroyed by either compressing or expanding one of the rows. The child is again questioned on the numerical equivalence of the sets...

5. Basic Language Structure is measured by two tasks. In one, the Language Comprehension Task (LCT) there are 20 cards containing pairs of stimulus pictures, but they depict different relationships between the elements. The child's job is to distinguish which relationship a particular word implies and then point to the corresponding picture. The other measure is termed the Verbal Instruction Task (VIT), a task which requires the child to indicate his understanding of verbal symbols by manipulating various materials...

(Stephens, 1971, pp 61-62)

During the pre-conceptual stage both play and imitation have major roles. Reality is adapted to the self (assimilation) in play; the self is adapted to reality (accommodation) in imitation (Flavell, 1963, p. 66). Successful performance at the pre-operational period generally represents optimum development for the moderately (trainable) retarded . As children achieve the transition from pre-operational to concrete thought their egocentric, rigid thought is superseded by flexibility in the reasoning process, the ability to classify and reclassify objects, combine and recombine categories, to return to a logical starting point by reversibility of thought processes.

For children who perform at levels achieved by average children between the years two-to-six an instrument designed by Haeussermann (1958) is available. Here the goal is to determine potential for development

> "... through circumvention of certain assessment obstacles - visual, auditory, or motor impairment - which may be present. For example, in assessing a child with auditory impairment, effort is made to determine if his memory has served to compensate for the insufficiency of his auditory perception. Effort is made to sample the child's intactness as the nature and extent of the impairment are determined.
>
> "Areas included in the assessment are:
>
> 1. Recognition of concrete familiar life-size objects
> 2. Recall of missing picture from memory
> 3. Orientation in time
> 4. Recognition of symbols and forms
> 5. Color discrimination

6. Form discrimination
7. Multiple-choice/color-form sorting
8. Manipulative ability
9. Amount recognition
10. Eye motion and gross vision

"Since Haeussermann's evaluation was based on tasks which are sequential in development, the child's performance level indicates what is to be accomplished next....Because the moderately retarded frequently are multiply-handicapped, Haeussermann's techniques are particularly appropriate in their assessments...

"As emphasis on the early diagnosis of abilities or disabilities has increased, there has been demand for measures which identify motor, perceptual, or cognitive deficits, and which can be quickly and easily administered, preferably by the classroom teacher. The Valett Developmental Survey of Basic Learning Abilities (Valett, 1966), for use with children two-to-seven years old, was designed to meet these needs."
(Stephens, 1971, pp. 62-63)

Assessments which measure Piagetian reasoning at the concrete and formal levels have demonstrated usefulness in assessing the thought processes of the educable mentally retarded (Inhelder, 1968, Stephens et al, 1969, Stephens, 1972). These studies indicate that retardates do not achieve formal thought. Since retardates previously excluded from school are a heterogeneous group, measures are needed which will assess cognitive development from the sensory-motor to the formal thought stage. The instruments cited in this discussion can be used for this purpose.

To promote skill in the appraisal of cognitive development, arrangements have been made for you to spend time with a child who is functioning at either the sensory-motor or pre-conceptual stage. As you observe him interact with his environment, you are to determine which sub-stage of Piagetian development characterizes his behavior: i.e., you are to locate his level of cognitive development. The workshop directors will be there to discuss your observations with you.

DEMONSTRATION: ASSESSING COGNITIVE DEVELOPMENT

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Introduction:

The Denver Developmental Survey is used to determine if an apparently normal child less than six years of age is delayed in motor, language, or personal/social areas of development. No special training is required to administer the measure or to interpret the results. The time required for the assessment is generally less than one hour. To adapt the test for mentally retarded subjects, the examiner estimates the subject's mental age, and opens the assessment with items at that level.

Four behavior areas are evaluated. These are: gross motor (large muscle movements), fine motor-adaptive (fine muscle movements and skills), language, and personal-social development. The examiner checks approximately thirty activities or skills expected to be present at a given mental age. Some responses can be obtained by observation, some by questioning parents and/or child care workers, and others through direct observation by the examiner. For example, a child with a mental age of two years is expected to wash and dry his hands, play some simple interactive games, build a tower of eight cubes, combine two different words in a sentence, follow two out of three simple directions, balance on one foot for one second, jump in place, and pedal a tricycle. Normal children and mentally retarded children will show some scattered successes and failures within the four areas. A "delay" is a failure by a child on an item if he is older than the age at which 90% of the children pass that item. The level at which the child is no longer able to perform the test tasks is important for programming purposes. Since the test is developmentally sequenced, this point indicates where training should begin. The information also will assist the teacher in planning.

The test does not give an IQ. Its chief purpose, for apparently normal children, is to alert the examiner to the presence or absence of delayed development. It does not predict intelligence; instead, it is designed to be used in conjunction with other tests.

Demonstration

The test was administered to Andy, a mongoloid, CA eight years, nine months. Based on previous testing, his mental age was estimated at four years; this estimate was the basis for the age line on which the initial test questions were selected. Andy scored "passes" on the highest level Personal-Social items. On the Fine Motor tasks he scored in the four-year age range. Later, when the Language items were presented, Andy chose not to perform. His non-performance continued through the last phase of the test, the Gross Motor section. This subject provided an opportunity for the test administrator to attempt various approaches and to re-affirm that testing of this kind was not necessarily completed in one test session.

The second subject, Ricky, seven years, eight months, of age, had an estimated mental age of two-and-one-half years; his records contained some note of visual problems. He was at ease and cooperative in the test situation. Score on the Personal-Social Scale was at the four-and-one-half year age level; approximately four-and-one-half years on Fine Motor, five years on Gross Motor, and five-and-one-half years on Language. (This was unusual; generally, the language score is not highest.) The test indicated areas that required further investigation, and it also suggested the levels at which programming should begin.

UNDERSTANDING SOCIAL AND EMOTIONAL DEVELOPMENT

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In assessing the emotional development of a retardate, particularly a child who exhibits numerous handicaps and who functions at a low level, several influences must be taken into consideration: namely, the interrelatedness of the

child's handicaps, the home environment, and the child's previous experiences. A child who is motorically or sensorially involved, for example, may choose ways of expressing himself which, if viewed objectively, may be classified as inappropriate, but, when examined in light of the handicapping condition, are, in fact, suitable. Likewise, a seizure-prone child may exhibit more primitive behaviors, a greater degree of impulsivity or emotional viability, due, perhaps, to the increased electrical activity in the brain or the effects of seizure medication.

The experiences a child has had, both within and without the home, also contribute to his emotional repertoire. The child may have assimilated the emotional tactics of familiar figures, or may have been reinforced, perhaps unwittingly, for previous inappropriate responses. Since it is impossible to isolate the above factors, or to submerge oneself within the child, emotional assessment is done, primarily, through observation: i.e., looking at how a child responds to situations, and, through these observations, drawing inferences as to the level of the child's emotional development.

In the normal child, there are several observable dimensions: the autistic, or self-focused, the impulsive, the ridden, the anxious, the curious, the integrated. Each of these dimensions may be translated into a variety of terms, depending on the developmental theory adhered to; each encompasses many behavioral facets. None of these is discrete, and a child may exhibit responses which incorporate or cross dimensions. The assessor, therefore, must ascertain the predominant patterns, with an eye to developmental movement.

A device, such as the Fairview Problem Behavior Record, provides a means of focusing on a child's typical pattern of responses. The scoring or obtaining of a social age for the teacher's information and use is not the prime objective; rather, it is sifting out or highlighting how a child habitually acts or reacts.

In looking at responsive patterns, the negative or inappropriate are often the most discernible. However, what a child does not do, as well as what he does do appropriately, are of equal importance. What you are looking for, primarily, then, are clues that suggest which responses constitute impediments to further learning, and which responses can be used as training tools or building blocks for further development. Once these are pin-pointed, a specific program can be worked out. It should be remembered, however, that emotional development is not something which can be taught. The total classroom climate, the opportunities built into the total program for appropriate expression of emotion, the consistency and visibility of structure and attitude: these are the props which allow a child to venture forward.

Social development, while intricately related to emotional development, encompasses both general and specific skills. Usually, social development refers to a child's ability to relate himself to his environment and the people with whom he comes into contact. We expect this ability to manifest itself in myriad situations. Looking at it more concretely, however, social development can be broken down into such categories as toileting, feeding, dressing, personal hygiene, interpersonal relationships, language, cognitive development, and behavior. Each of these areas in turn can be broken down into specific, sequential skill levels. Tools such as the Trainable Mentally Retarded Profile (Reporting Service for Children, 1963), the Vineland Social Maturity Scale (Doll, 1965), and the Learning Accomplishment Profile (Sanford, 1971) permit

the charting of a child's level of competency within each skill area, and serve as a guide in formulating a sequential, developmentally-based training program. As stated in previous sessions, such a program must be success-based: i.e., it must grow from those skills a child has mastered, and move, in small, carefully structured steps, toward the acquisition of the new skill.

In summary, while these are some standardized guideline, the assessment of a child's emotional and social development must be, primarily, an analysis of observations drawn from many situations. What the child does (or does not do), and under what circumstances, then furnishes the base-line data necessary to begin programming. Although programming may be task- or skill-oriented, it may also involve the creation of a specific type of environment, the presenting of opportunities, or the subtle intrusion of alternate stimuli which will maximize the probability of appropriate responses.

DEMONSTRATION: UNDERSTANDING SOCIAL AND EMOTIONAL DEVELOPMENT

To demonstrate use of the above-mentioned scales, four children were selected, each of whom exhibited varying levels of social and emotional development:

Bruce: a hyperactive child who did not relate to peers or adults, but would manipulate objects and perform tasks for tangible reinforcers

Jimmy: a child who engaged in parallel play activities and responded to adults

Larry: a self-abusive child who did not relate to peers, adults, or his environment in a meaningful way

Robbie: a lethargic child who engaged in cooperative play and related to peers and adults.

These children were placed in a semi-structured play situation with the demonstrator. The trainees were instructed to observe how each child dealt with the demonstrator, the other children, the toys, and the total environment of the room. In the above situation:

Bruce: separated himself from the group, used some toys, but in an inappropriate manner; resisted direction from the demonstrator, but did engage in some teasing behavior

Jimmy: played alone, and made one attempt to engage in play with another child

Larry: engaged in slapping and biting behaviors; he was held by the demonstrator for nearly the entire period; however, once he became calm, he did engage in some play activities with the demonstrator

Robbie: chose a toy, played cooperatively with an adult from the audience, and would, with direction, play with another child, although a preference for the adult play partner was apparent.

A group discussion of observed behavior followed the demonstration.

MAL-ADAPTIVE BEHAVIOR

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Of the numbers of children previously excluded from public school, well over 50% exhibit behavioral patterns which pose serious management problems for the classroom teacher. In reviewing the literature, it is noted that many of these "problem behaviors" are those usually associated with the term "autism" (Hingtgen and Bryson, 1972).

The word "autistic" brings to mind images of bizarre behavior patterns; however, in terms of normal human development, all infants begin at an autistic stage. During this developmental period infants (1) are totally unaware of themselves as separate from the environment; (2) treat their own body as if it were foreign (i.e., they play with their toes as if they were toys); (3) have no competence in interacting with the external world; (4) are incapable of integrating information; (5) are devoid of language to represent their experiences; (6) are centered entirely on their own needs and desires. The child who, with few modifications, still functions at this level, is labeled autistic.

Characteristically, autistic children exhibit various outstanding diagnostic signs; included in these are (1) the desire to preserve a sameness of environment (i.e., no object can be moved), and (2) the habit of sitting alone in one spot for extended periods of time, looking contemplative (this has been termed "autistic aloneness"). However, there are many other characteristics of the autistic child, the most prevalent being the inability to represent experiences through symbols. Only about one-half of all autistic children possess speech, the rest are either completely mute, or throughout their lives speak very rarely. Speech, when present, usually appears early: complete sentences may be spoken by one year of age, sometimes before the words which comprise the sentence have been used individually. Voice quality is usually a low-pitched, parrot-like monotone, and whispering is common. Speech, for the autistic child, is rarely used as a means of communication, but rather as a specific response to certain stimuli. Objects can be labeled, but speech is rarely used to ask or answer questions. The autistic child's usual mode of expression is that of leading an adult by the hand to a desired object. Words like "I" and "yes" - positive assertions of self - are usually absent from the language of the speaking autistic child, although they sometimes appear by age six or seven.

Developmental oddities in behavior begin to appear, and are noticed by the parents, by four months of age. Reports of difficulties prior to this age are usually discounted as either being natural to the autistic stage of development, or are colored by the parents' present frustrations with the child. Upon retrospect, parents report the following behaviors between four and eighteen months of age: (1) the child fails to make anticipatory movements prior to being lifted; (2) he fails to adjust his body to the person holding him; (3) prolonged headbanging and rocking behaviors are present; (4) he shows an unusual fear of strangers; (5) there is an obsessive interest in certain toys or mechanical appliances; (6) play is highly repetitious or ritualistic; (7) a need is exhibited for the preservation of environment; and (8) odd speech patterns are used.

When the child is between 18 and 24 months of age, parents begin to be concerned. Behaviors such as the following are apparent: (1) autistic aloneness, as previously mentioned, becomes prevalent; (2) the child does not respond to his name; (3) when attempts are made to divert pre-occupation with objects, violent temper tantrums occur; (4) child shows skill in gross and fine motor areas, and possesses good spatial and musical ability; and (5) if speech is developed, there often is an astounding vocabulary and a phenomenal memory.

Within the last thirty years many questions have begun to be asked about causative factors in infantile autism. Two main theories of causation have been advanced: that of environmental factors, and that of biological causation. The name most linked with environmental causation is that of Leo Kanner. In 1943 Kanner reported eleven cases of infantile autism. His original statement of cause was "....an innate inability to form the usual biologically-provided affective contact with people, just as other children come into the world with innate physical and intellectual handicaps." (Kanner, L943). However, his description of the parents of autistic children has been frequently quoted by those who favor environment as a causative factor, despite the fact that Kanner had stated that 10% of the parents he interviewed did not fit into his stereotype. He termed these parents refrigerator parents", and described them as: (1) cold, (2) bookish, (3) formal, (4) intelligent, (5) introverted, (6) disdainful of frivolity, (7) humorless, (8) excessively rational and objective, (9) mothers were anxious to do a good job and carried out physicians' instructions to the letter, and (10) they characterized themselves as uncomfortable in the presence of others. Kanner summarized these parents as highly organized, professional, cold and rational people who happened to defrost long enough to produce a child (Kanner, 1954) Sarvis and Garcis (1961) also attribute causation to environmental factors. They postulated that difficulties arose when an infant was roughly handled by the mother during period of hunger and feeding. To the infant, feeding became associated with pain; in an effort to reduce pain the child ate little and turned quickly away. The infant then learned to avoid his mother to avoid pain; this avoidance behavior was then generalized to all people.

The theory of biological causation (i.e., damage to brain cells) is based on neurological impairment which results in cognitive dysfunctioning (Rimland, 1964). Children with cognitive dysfunctioning have been described as: (1) unable to relate new stimuli to past experience; (2) unable to understand relationships or to think in terms of concepts, symbols, or analogies; (3) unable to integrate sensations into a whole. Rimland (1964) postulated that the neurological impairment is based in the reticular formation of the brain resulting in sensory deprivation, and causing an inability to form relationships. He hypothesized that children who are autistic are genetically vulnerable as a consequence of an inborn capacity for intelligence. He believed that prenatal noxious effects have the greatest damage on the most rapidly developing organisms. Thus a more "intelligent" fetus, developing a highly integrated nervous system, is most vulnerable to injury to the reticular formation since his nervous system, during development, is plastic and adaptive for a longer period of time (Rimland, 1964). He has supported his theory of a relationship between high intellectual capacity and autism by comparing characteristics and incidence of autism with Terman's characteristics of gifted children. It was found that both gifted and autistic children had the following characteristics:

(1) a large majority were first-born; (2) the proportion by gender was three or four males to one female; (3) there was a larger than normal proportion of children of Jewish heritage; (4) parents were highly intelligent; and (6) there was a low incidence of mental illness in the immediate and extended family.

In summary, proponents of the environmental causation theory support their position by stating: (1) no discernable physiological or neurological abnormalities were found; (2) parents were similar in characteristics; (3) psychotherapy had beneficial effects; and (4) incidence of first-born and only children was high. Conversely, proponents of the biological causation theory state that: (1) some parents of clearly autistic children do not fit the pattern of "refrigerator parents"; (2) parents who do fit this pattern do not always produce autistic children, and siblings of autistic children are usually normal; (3) unusual behavior has been present from birth; (4) the ratio is that of three or four boys to one girl; (5) autism has been seen in children with known brain damage; and (6) unlike mental illness, there is an absence of gradations which would create blends of autism from normal to severely affected.

What is the cause? The arguments for and against each hypothesis appear to be paradoxical. Most likely, several inter-related causative factors produce an autistic child.

In realistic terms, causative theories have not led to any applicable remediation techniques. Although the incidence of autism is only 2 to 4.5 per 10,000 children (Hingtgen & Bryson, 1972), the "cure-rate" for these has been almost nil. Other than special classroom placement, usually in a class for the retarded, and eventual institutionalization, very little encouraging work has been done with the autistic child. Although improvements in the lessening of bizarre behaviors have been noted, rare has been the case in which the autistic child has matured into an independent, self-supporting adult. It appears that a favorable prognosis, in terms of the lessening of bizarre behaviors, not in terms of eventual independence, has been linked most closely to speaking ability.

The classroom teacher, confronted with a mentally retarded child who display autistic-like behaviors, often has no effective methodology to employ. As has been pointed out, complete amelioration of autism is a long process, and success frequently is limited. There are, however, several techniques which allow the teacher to achieve a degree of success in some areas of training.

A child who displays autistic-like behaviors may withdraw from people as if he were "in a shell" or "in a world of his own", and thus block out the possibility of environmental interaction. The tactile mode, however, seems to be the one sensory modality through which such a child can be encouraged to respond. Hugging, touching, stroking, and, in some cases, tickling, are, for the child, pleasurable sensations which, when paired with the performance of a task, become motivators and reinforcers. Music and rhythmic activities have also been proven to be effective motivators.

Mimicking the child's actions, either through use of a mirror or pantomime activities, frequently results in a diminution of the autistic behavior.

The substitution of a more appropriate activity for a stereotyped behavior (providing the activity is similar to, and capitalizes on, the skill exhibited via the stereotyped behavior) is also an effective remedial technique.

The teacher must also be aware of the child's non-verbal communication techniques. Once these are pin-pointed, the introduction of more appropriate expressive modes may begin. Also, it is important, when working with such a child, to understand that being firm and establishing consistent limits is not synonomous with being cruel. A child will often respond better to firm kindness than to weak structure. Security, for this child, evolves from the consistency of the environment.

DEMONSTRATION: MAL-ADAPTIVE BEHAVIOR

The demonstrator worked with two children who exhibited autistic behavior syndromes. Initially, the work was individual; later it was done in pairs. The first child resisted any type of interaction as he screamed and cried. The demonstrator placed the child on her lap, and introduced a music box. Although the child continued to cry, he reached for the music box and attempted to manipulate it. After this activity, the demonstrator moved to pegboard work; during this activity the child was placed beside the examiner in a position that maintained physical contact between the two. As this was done, crying and resistance to the task diminished, and the child completed the designated activity.

The second child engaged in finger-flashing and foot-stomping behaviors. The demonstrator involved the child in physical activities which required hand involvement: i.e., marching while beating rhythm sticks. By employing similar techniques, the child successfully performed several activities.

During the demonstration social praise and tangible reinforcers were used on an intermittent basis. Tactile contact was maintained throughout the demonstration, and care was taken to report verbally to the child what was occurring. The child's body language was likewise verbally interpreted by the demonstrator whenever possible.

A "Simon Says" game, into which some of the behaviors exhibited by the child were incorporated, was successful in eliciting relational responses, both to the other child and to the demonstrator.

A question and answer period followed the demonstration.

SECTION III

PROFILING AND PROGRAMMING

Once the assessment of motor, language, cognitive, and social-emotional development is completed, the collected data is analyzed and arranged. The resulting information is used to develop an individually appropriate program in each skill area. The compilation of this data into profile form allows the teacher to determine areas of individual strength and weakness, establish program objectives, and properly sequence the learning activities. The following section presents the profile format, introduces behavioral objectives, and examines each skill area in terms of classroom program activities.

PROFILING AN INDIVIDUAL'S DEVELOPMENT

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Through the use of previously discussed assessment techniques, a specific child's motor, language, cognitive, and social-emotional developmental levels are ascertained. The analysis of these assessments comprises a profile, and can be used to determine the program best suited to this child's individual needs. Having assessed his performance level, activities are then devised to promote development to the next desired achievement level.

Actually, profiling is charting the child's levels of performance in the various developmental areas. The profile, which indicates present performance level, provides an effective and meaningful analysis of the child's abilities based on observed, recorded performance, and thus supplies information which allows the programmer to incorporate past successes with new challenges. For this reason, occasionally, a child will miss an item on the scale, but accomplish one that is more advanced. A range of tasks, approximately 6-to-12 months on each side of the child's developmental age generally is needed in order to obtain an appropriate base from which to establish behavioral objectives.

Once the individual profiles are completed, a composite profile for the entire class can be made. The composite profile is useful in the formulation of groupings for different activities.

Demonstration

To demonstrate the techniques of profiling, results of an individual's motor, cognitive, language, and social-emotional assessments were arranged into a developmental chart which set forth the level of performance in each area. Two points were emphasized:

(1) the assessment and profiling techniques were applicable in any education or training situation, regardless of the child's level of functioning;

(2) items on the assessment scales themselves are a source of ideas for sequential program activities.

The organization of a profile for each child prior to the devising of a program enables the instructor to identify clearly the areas of strength and areas of instructional need. A composite of each child's profile into a class chart also delineates those areas suitable for group instruction. From these, an appropriate program which begins at the skill level which the child has mastered can be devised. The profile also serves as a monitoring and evaluation device, for it enables the instructor to assess both the child and the program continually. Lack of progress in a particular area indicates a need for reassessment with, perhaps, other disciplines supplying additional data. The profile, then, properly viewed, becomes a broad curriculum guide for each child which identifies general types of activities to be presented, but allows the teacher to devise specific tasks suitable to the needs and abilities of the child.

USE OF PROFILES TO ESTABLISH BEHAVIORAL OBJECTIVES

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A behavioral objective is a statement which predicts the learning outcome of a given situation in terms of observable student behavior. It establishes the parameters of the situation: i.e., it defines precisely what the student will do, under what conditions, and at what level of competency.

A behavioral objective must be clearly communicated, have an observable behavior as its goal, indicate a desired competency level within different environmental conditions, and must also describe the conditions within which the objective will be working. In other words, the behavioral objective serves as both a program description and an evaluation, for it delineates: (1) what the child will accomplish at the conclusion of the lesson (e.g., label an object when shown part of the object); (2) at what developmental level he will be able to perform with 100% accuracy; and (3) under what conditions (e.g., after having been shown a replica of the object immediately prior to the pictorial presentation). Failure to satisfy the stated terms of the objective leads the teacher to a reassessment of the program. Was the task too complex? Were the directions understood? At what level did the child actually perform? New objectives may then be formulated.

"If we assume that a prime purpose of education is to alter human behavior in a desirable manner by structuring the environment to promote learning, then it follows that the most significant goals of the learning process should be stated in terms of observable student behavior. Good objectives, clearly stated as observable outcomes, allow for better selections of learning approaches, media used, logical evaluations, and a clearer understanding by students of what is expected of them." (Hernandez, 1971, p. 1) Relevance to the student and his cultural environment should be the final determinant in formulating any objective.

Locating the child by profiling his level of development, utilizing scales which enable the teacher to establish present functioning in terms of normal growth and development, is essential in setting up behavioral objectives. Scales measuring personal-social growth, language development, cognitive development, gross and fine motor development, and self-help skills have been developed to help us accomplish this task.

Once the present level of functioning has been established, behavioral objectives can be set up as goals which specify what the child or children will be able to do at the completion of the task. The behavioral objective must be quite specific and realistic in terms of possibility for achievement. In order to help the child achieve these behavioral goals the teacher must accurately measure, evaluate, and describe the child's level of competency in each particular area of development. One must also give consideration to the fact that the expected performance of the child will differ when the child is in a group situation, as opposed to a one-to-one relationship. Behavioral objectives must, then, be flexible enough to enable the child to experience success in both situations.

Equally important are the "given" or "withheld" conditions that will be a part of the behavioral objectives. Materials, data, tools, etc., also must be specified to assure that the objectives are clearly stated. Once goals have been set up for the child, activities must be planned which will encourage the development necessary to achieve these goals. Activities should be planned in small sequential steps which allow him to experience success and security as he develops.

Demonstration

A profile, developed by one of the participants during the program, was used as a baseline from which behavioral objectives could be formulated. The particular profile was that of a 13½-year-old institutionalized boy who exhibited many autistic-like behaviors, rarely interacting with objects or people. As the five areas of development were discussed, there was reminder that one should begin with an area of success, and build a program of development from this level.

Personal-Social: The child was able to complete some skills at a 12- to 18-month level. The instructors established the following behavioral objective: The child will be able to drink properly from a cup 100% of the time unassisted.

Suggested activities were built around the fact that the child was able to use a spoon. This level of competency indicated that the child could grasp objects, and move them to his mouth. The long-term objective was then broken down into small sequential steps.

Example Activity #1: the instructor will place his hand over the child's hand, and curl his fingers around a cup. The instructor will then lift his hand along with the child's hand and the cup to the child's mouth.

Example Activity #2: child will curl his fingers around the cup unassisted, but instructor will guide the child's hand up to his mouth.

Example Activity #3: the instructor only guides the child's hand to his mouth when needed.

Example Activity #4: the child will be able to curl his fingers around cup, lift cup to his mouth, and drink from it unassisted.

Language: The child was able to complete some skills at a six-month level. The behavioral objective established for this area was: the child will turn to a voice 100% of the time when his name is called. Again the process will be in small sequential steps. Suggested activities were built around the fact that the child responded to a bell.

Example Activity #1: each time the bell is rung the child's name will be called.

Example Activity #2: each time the child does not respond as the bell is being rung and his name is called, the instructor will gently turn the child's face toward the instructor.

Each task step will proceed gradually until the child has mastered the behavioral objective set down for him.

Cognitive: In terms of Piagetian stages of intellectual development, the child was functioning at the Tertiary Circular Reaction Stage: i.e., he would pull the tablecloth in order to attain others' food. The stated objective was: Given a f vorite toy hidden under a blanket and placed on a pillow just beyond the child's reach, the child will extend his arms and pull the pillow toward him until the desired object is within easy reach; he will succeed in attaining the toy two out of three times.

Example Activity #1: the child is allowed to play with the toy for a 3-minute time period. The toy is then placed just beyond his grasp, and he is encouraged to extend his arms and body to attain it.

Example Activity #2: the toy is placed on a pillow within the child's hand range, and he is shown how to pull the pillow in order to obtain the object.

Gross Motor: The child functions at an 18- to 24-month-level, walks upstairs and downstairs with some assistance, and runs without falling. However, he has not demonstrated the ability to perform some items at lower levels: e.g., walk backwards, stoop to recover an object, and kick a ball. One must keep in mind that a forward motion for many of these children is much safer, much easier, and much more comfortable than anything that involves depth perception, or anything that is so uncertain as walking backwards. The following objective was set: the child will walk downstairs unassisted, one step per tread, 100% of the time.

Example Activity #1: the child is encouraged to use the handrail rather than the teacher's hand for support in going downstairs; this may be done by placing the child's hand on the handrail, with the teacher's hand over it, with the teacher walking behind the child.

Subsequent activities would emphasize the removal of support: i.e., the teacher's hand would be withdrawn; the child would be given a large object which requires a two-handed grasp to carry, but would be allowed to walk along the wall side of the stairs; the child would be placed in the center of the stairs, and a favorite toy or person or bit of food would be clearly visible at the foot of the stairs.

Fine Motor: The only success the child has in this area is eating with a spoon. He does not grasp with thumb and forefinger, does not beat spoons, does not hold a pencil, does not build towers of cubes, does not throw a ball, does not turn pages, does not fold paper. It is important to remember that he also does not attend well to objects nor hold things for any sustained period. Possibly if he had the same vested interest in other objects as he has in a spoon, there might be a different type of orientation. The other objects do not have the same means-end relationship for him that the spoon does: i.e., only the spoon is used in the acquisition of food. The behavioral objective would be geared toward developing an interest in objects and using this interest to develop fine motor coordination.

Example Activity #1: place a bowl of food (the food to be one of the child's favorites) - e.g., applesauce - in a brightly colored box which is just out of reach, and say to the child, "Now, get the box." The attempt here is to trade interest in food for the means-end he must accomplish in order to get it. One must associate something which is pleasant, desirable, and needed, with something which is, at best, neutral. In this example, given the command, "Get the box", the child, using a palmer grasp, will pick up the box three out of six times.

Subsequent activities would fade out the immediate acquisition of food, and focus on the response to the command.

PROGRAMMING FOR MOTOR ACTIVITIES

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"In discussing the contribution of motor activity to learning, Thompson (1969) notes that Kephart (1964) identifies four motor patterns (i.e., motor acts which....possess extensive variations which are significant to education): (1) balance and maintenance of posture, (2) locomotion-walking, jumping, etc., (3) contact-motor activities with which the child manipulates objects, and (4) receipt and propulsion - skills with which the child investigates movements in space. Many children require additional help and additional learning experiences to continue their motor learning until a level is reached which permits the use of movement, not for specific purposes, but for the more generalized purpose of information gathering. Therefore, it becomes the responsibility of the school....to help the child expand his motor learning.

"Improvement in gross and fine motor skills increases the young retardate's ability to interact with, and therefore gain additional information from his environment..../and also/ increases his ability to participate successfully in daily activities which surround him..../However/ repeated demonstrations, opportunities, and training are required for him to master that which is acquired incidentally by normals." (Stephens, 1971, pp. 156-157)

As review is made of the behavioral patterns of pupils previously excluded from school, irregularities in motor development emerge as a common characteristic. Cerebral palsy or other physical handicaps may have impaired motor development; or minimal activity levels, caused, perhaps, by lowered vitality, poor motivation, or inadequate receptivity to stimuli, may have resulted in little motor action or interaction on the part of the child. To get the child to act motorically and to interact with the people and things around him may be one of the primary aims of the training program for pupils previously excluded from school. Efforts to achieve this must be commensurate with the child's present level of functioning as determined by motor development scales. As the child's motor performance is profiled in various areas - i.e., gross motor, balance, eye-hand coordination, manual dexterity, etc. - irregularities probably will be noted. For example, a child may put on a sweater,

a task which requires eye-hand coordination at a 42-month level; yet, he may not be able to button it, a manual dexterity task also at the 42-month level. He may walk downstairs one step per tread, an activity which places him on the Smeets scale (Stephens, 1971) at 36 months in gross motor activity; yet he may be unable to walk on tip-toe, an ability which generally emerges at the 30-month level. Therefore, the individual program which would be devised for this child must provide activities commensurate with his varying levels of functioning. If the pupil has motor impairment rather than a delayed tempo of development, then suggested remedial activities should be obtained from the physical and occupational therapist.

In selecting appropriate activities, the desire is to choose one slightly in advance of the child's present level of functioning, one that is challenging or motivating, but one not so far in advance that it is frustrating. To obtain a desired match requires knowledge of motor development, motor activities, and the child's level of functioning, as well as experience in "cut and try", in relating the activity to the child's performance level. Not only must there be skill in matching the activity to the performance level, but also in providing a variety of activities at that level, and in determining when the child's progress has been sufficient to warrant inclusion of activities at the next higher level on the development sequence. Obviously, such expertise in programming comes from experience.

To date, there is no one comprehensive motor development program that provides a variety of activities appropriate for each area at the different levels of motor development from birth to six or seven years. Brief suggestions for remedial activities which promote gross motor and fine motor skills from birth to five years have been made available by Denhoff (1967), and a project carried out by Stevens, McCarthy, and Billingsley (1969) on programs for severely retarded children has a sequence of developmentally appropriate activities for the severely subnormal. Other sources of sequentially related motor activities include Baumeister's Mental Retardation (1967), Baumgartner's Guiding the Retarded Child (1965), Bensberg's Teaching the Mentally Retarded (1965), Cratty's Motor Activities and the Education of Retardates (1969), Connor and Talbot's An Experimental Curriculum for Young Mentally Retarded Children (1966), Espenschade and Eckert's Motor Development (1967), Frankel, Happ, and Smith's Functional Teaching of the Mentally Retarded (1966), Hatcher and Mullins's More than Words (1967), Rosenzweig & Long's Understanding and Teaching the Dependent Retarded Child (1960), and Valett's The Remediation of Learning Disabilities (1967).

To be a successful programmer one must be able to analyze levels of development, analyze activities in terms of these levels, and match these two to the individual child's performance. Source books of suggested activities are helpful, but as experience is gained in the analysis of sequential development there will be an accompanying proficiency in identifying and varying activities appropriate to specific developmental levels. Review of an individual's motor development profile served to suggest the activities presented in Table 4.

In each instance, programming began with a skill the child had mastered. This skill was then incorporated into a slightly more complex activity geared toward the eventual attainment of the next developmental level. Activities

TABLE 4

PROGRAM ACTIVITIES EVOLVING FROM PERFORMANCE
on
SMEETS' ADAPTED MOTOR DEVELOPMENT SCALE

Area	Level	Suggested Activities
Gross Motor	Walks upstairs alone (24 months); Does Not jump with both feet (30 months)	1. Play which requires stepping off blocks 6" to 8" high. 2. Propel child's body through brief jumps.
Balance	Stands alone (12 months); Does Not kick large ball without holding wall (18 months)	1. Demonstrate and then assist child as he pushes objects with foot across room; 2. Place ball in center of room and guide child's foot through ball kick.
Eye-Hand Coordination	Beats two spoons together (12 months); Does Not throw ball any definite fling (18 months)	1. Place ball in child's hand; enforce release of thumb and fingers so that ball drops; 2. Place ball in child's hand, guide hand through throwing and release motions.
Manual Dexterity	Turns pages 2-3 at a time (18 months); Does Not attempt to fold paper (24 months)	1. Demonstrate turning pages singly; guide child's hand through activity; 2. Cloth folding (scarf, washcloth, etc.); demonstrate fold; guide child's hands through folding activity; after cloth folding is mastered, proceed to paper folding.

presented in the table are global, and the reader should keep in mind that, in the actual training situation, these areas would be further delineated.

As one attempts to initiate individually appropriate motor activities, there is swift realization that presentation of an activity does not insure the child's involvement. Children previously excluded from school may attempt to avoid motor activities as they turn from people and things, and engage in self-stimulating or self-mutilative behavior. They may let objects slip from their grasp rather than clutch them; they may push objects away rather than reach for them; they may engage in throwing or repetitive banging of an object rather than according it its intended use. As a result, skill does not increase in fine motor acts, or in eye-hand coordination and manual dexterity. Techniques employed in a project by Stephens, Smeets, Baumgartner, and Wolfinger (1970) to elicit interest, attention, and interaction employed Bruner's (1966) three levels of representation:

(1) enactive (the child is physically guided through motor activity);
(2) iconic (precise demonstration precedes the subject's attempt to perform an activity;
(3) symbolic (verbal instructions and explanations precede the subject's attempt).

(Stephens, 1971, p. 164)

Children who do not respond to a symbolic approach may profit from teaching geared to the enactive or iconic level: i.e., if a child does not roll a ball after receiving verbal directions (symbolic level), the trainer may demonstrate a roll (iconic) level); if inability or disinterest continues, the child's hands may be guided through the act of rolling (enactive).

Attempts to break established habits of inattentiveness, self-mutilative behavior, or destruction of objects may require a one-to-one, and in some instances, a two-to-one tutor-pupil ratio. For example, a subject cited by Stephens (1971) refused, upon entrance into a training program, to manipulate objects manually or to attend to them visually.

> "Initial training, which required two tutors, was at the enactive level; one person was responsible for seeing that the subject remained at the table, while the other obtained materials and guided the subject's hands in activities which involved kneading play dough, rolling a ball, and squeezing a sponge. The immediate goal was to promote spontaneous manipulation of objects: i.e., interaction with the immediate environment. Efforts, whether guided or self-initiated, were rewarded with cookies and candy (and/or social reward)."
> (Stephens, 1971, pp 164-165)

Obviously, the initial training sessions were brief, sometimes five minutes or less, and a variety of activities were used, but as interest and cooperation were established, the sessions were increased gradually to a meaningful 20- or 30-minute period, and a single activity sustained attention for a major portion of the period.

In the study cited above (Stephens, 1971) the degree of skill displayed by a subject was analyzed as he was presented activities. To do this, a scaling technique devised by Connor and Talbot (1966) was used.

"For example, members of the group displayed various levels of performance when they were provided the opportunity to put on a sweater: (1) some evidenced no interest in the object, (2) others picked it up and draped it around themselves in a vague, unsuccessful way, (3) others attempted unsuccessfully to get their arms in the sleeves, (4) while others succeeded in getting at least one arm in a sleeve, although the sweater itself frequently was upside-down, and (5) still others, after extended effort, succeeded in getting it on correctly. The immediate goal was to promote the pupil's performance from the present level to the next higher one rather than expecting an immediate progression from misuse to use, or from failure to success.

"Justification is difficult for prolonged use of a two-tutors-to-one-pupil ratio; however, such concentrated effort may be supplied initially if it leads to spontaneous exploration and manipulation of objects, and later to self-initiated activity. Through such highly concentrated effort the child may be prepared for a one-to-one teacher-pupil tutorial situation, and in turn the one-to-one relation may prepare him for learning in a small group....

"Findings from the above study substantiate those of Lillie (1968): i.e., diagnostically based motor development lessons appear to have a facilitating effect on the development of motor proficiency of preschool retardates." (Stephens, 1971, pp 165-166)

Because early sensory-motor activity provides the framework for later cognitive development, programming for appropriate motor activities is essential to both physical and mental development. As a programmer, each teacher should develop a repertoire of activities appropriate for the various levels and areas of motor development, and have at his fingertips methods (such as behavior modification, use of Bruner's three levels of representation, etc.) which can be used in their implementation.

PROGRAMMING FOR SELF-HELP SKILLS

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Pennsylvania Office of Right to Education

Self-help and independence in the 1970's implies consistent growth and development for all children regardless of functioning levels. For the low-functioning child, this includes self-care, good work habits, moving out of the crib, traveling, getting along with others, and participating in the skills of home and family living. For the child who can achieve slightly more, it includes the building of vocational skills, participation in recreation and leisure time activities, and in assuming community responsibilities.

The competencies expected for such boys and girls at present are a far cry from the self-care skills that people expected children to achieve in the 1950's and 1960's. At that point, teachers and aides were encouraged to help children learn to sit so that they might be accepted in public school programs; tooth-

brushes were placed and used in artificial settings rather than at home; children learned to dress themselves by using unrealistic rigid methods. Too often, tying shoe strings was on the priority list. Numbers of boys and girls were forced to use artificial materials, rather than getting ready to tie shoe strings when they mastered the fine-motor competencies essential for such tasks.

Since State Regulations in the 1950's and 1960's indicated that pupils were to be toilet-trained before entering classes for trainable mentally retarded children, they frequently were excluded from classes on the slightest pretext, even when an isolated accident was caused by the transition to a strange school or class. Boys and girls who needed to scream as part of their fearful transition were eliminated from programs rather than being supported with realistic expectations which the child understood.

How different are the emotional climates that have come into being throughout the United States in the 1970's! Teachers now expect boys and girls to achieve - to grow and develop. The emphasis on motor development, on moving, and on gradually learning to care for themselves is reflected in the sequentially arranged Chart I, "Self-Care".

The simplest kinds of self-care skills are being taught as children learn to toilet themselves, not only in institutions, in growth and development centers, in private licensed facilities, but also in public school. Teachers, with their aides, are ready to help each boy and girl with step-by-step procedures.

The following list of supplementary materials will be useful to teachers who are working to promote self-help skills in their pupils, and are available through the Pennsylvania Department of Public Welfare, Office of Mental Retardation, Harrisburg, Pennsylvania:

Infant and Toddler Projects. Materials developed in various Infant and Toddler Projects in Pennsylvania (ESEA, Title I, P.L. 89-313), and in the Office of Mental Retardation.

Toilet Training. Sister M. Leonard Front, McGuire Memorial Home

Design for Growth and Development. An authentic evaluation of a participant in an ESEA Title I Program.

Case Study - An ESEA Title I Success Story. The study of Michael K.

Developmentally Retarded Children Can Learn in Infancy and Early Childhood. Demonstration

Following the presentation two films were shown. The first film, entitled "Genesis", demonstrated techniques of self-help training, utilizing behavior modification techniques. The second film, "Ask Just for Little Things", focused on the three basic life skills of ambulation, personal hygiene, and attending, using the fundamental concepts of behavior modification.

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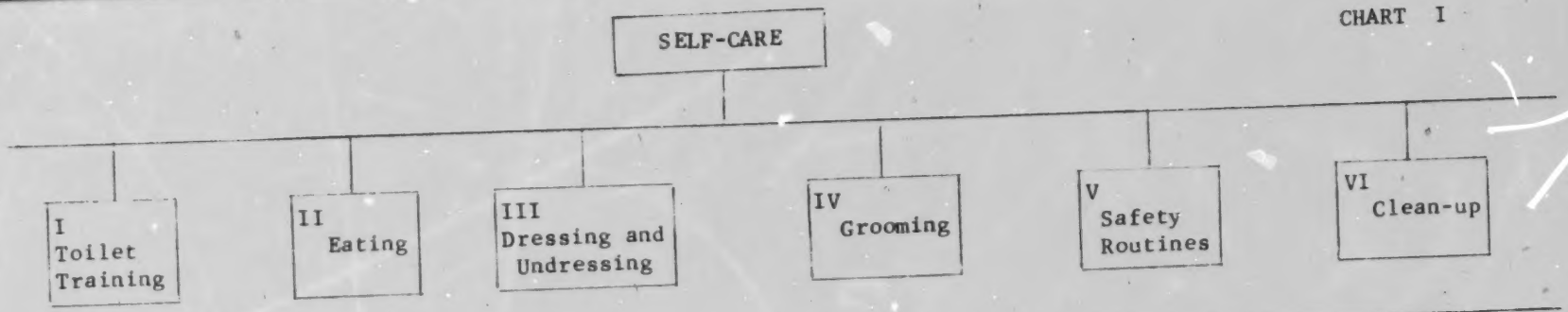
CHART I



SCOPE OF EXPECTATIONS	SEQUENTIAL DEVELOPMENT OF BEHAVIORS AND SKILLS	RELATED EXPERIENCES	SUPPLIES & EQUIPMENT
I. TOILET TRAINING	Not toilet trained Shows discomfort when wet Sits on toilet under supervision at definitely scheduled periods Sits on toilet without supervision for short time as scheduled Urinates when placed on toilet at scheduled time Communicates need to go to toilet Goes to toilet for bowel movement Goes to toilet for urination Cares for own clothes in toilet Toilet trained except for nocturnal enuresis Completely toilet trained		
II. EATING	Eats baby food Eats from spoon Feeds self with fingers Holds cup Chews food Uses spoon - with spilling Uses spoon - without spilling Uses fork Spreads with knife Cuts with knife Uses knife and fork together		

CHART I (cont.)

III. DRESSING AND UNDRESSING	Does not help to dress self
	Removes outer garments when unbuttoned
	Puts on outer garments with help
	Puts on outer garments without help
	Unzips garments with help
	Unzips garments without help
	Unbuttons clothes
	Buttons clothes
	Removes shoes
	Puts on shoes
	Removes and pulls on socks
	Ties knot
	Unties knot
	Pulls on boots, snowpants
	Ties shoe strings
	Dresses self without assistance
IV. GROOMING	
1. Washing Hands	Does not know how to wash hands
	Tries to wash hands with little success
	Washes hands with help
	Washes hands without help
2. Washing Face	Does not wash face
	Tries to wash face with little success
	Washes face with help
	Washes face without help
3. Brushing teeth	Does not know how to brush teeth
	Tries to brush teeth
	Brushes teeth with help
	Brushes teeth alone and routinely
4. Care of Nose	Does not care for nose
	Tries to use tissue
	Uses tissue with help
	Uses tissue as needed

CHART I (cont.)

5. Care of Clothing	Does not care for clothing Follows directions in storing clothing Stores clothing routinely		
6. Care of Hair	Does not care for hair Tries to comb or brush hair with help Succeeds with help Combs and/or brushes hair as needed		
V. SAFETY	Unable to care for self on bus, at school Learns to identify precautions as needed in facility - with help Cares for self without help Observes needed precautions		
VI. CLEAN-UP	Does not clean after self Learns, routinely with help, to store materials and/or toys in proper places Cleans after self without reminding		

DEVELOPING COMMUNICATION SKILLS

William A. Benson
Pennsylvania Office of Right to Education

Numerous scales of a child's communication development are available. It is advantageous for parents and teachers to review these in order to gain an understanding of the beginning stages of communication. Frequently, the child's initial efforts to communicate are overlooked. Scales will serve to indicate the level at which the child is functioning, and provide fuidelines for the possible succeeding steps. It is important to remember, however, that not every child will pass through the steps the same way, at the same age level, or in the same sequence.

Baumgartner (1967, 1969) presents a sequential communication scale which is the basis for this discussion. It is useful because of the special emphasis it gives to the first several stages of communication development.

Parents and teachers who work with individuals who are at the beginning stages of communication quickly learn that various cries and gestures have meaning. Hurlock (1970) has analyzed two areas:

What Babies' Cries Mean:

- Piercing screams - physical discomfort or pain;
- High-pitched shrill wails, interrupted by whimpering and groaning - physical discomfort or pain;
- Short, sharp, piercing cries - physical discomfort or pain;
- Low-pitched moans - fatigue or general discomfort;
- Low-pitched moans with feverish look - sick;
- Low-pitched moans broken by yawns and sighs - sleepiness;
- Angry howls punctuated by sucking movements - hunger;
- Angry howls ending abruptly at sight of person - spoiled crying.

What Babies' Gestures Mean:

- Smacking lips or ejecting tongue - hunger;
- Squirming and trembling - cold;
- Sneezing successively - wet and cold;
- Pushes nipple from mouth with tongue - satisfied, or not hungry;
- Turning head from nipple - not hungry, or satisfied;
- Allows food to run out of mouth - not hungry, or satisfied;
- Smiles and holds out arms - wants to be picked up;
- Squirms, wiggles, and cries during dressing or bathing - resents restrictions on activities;
- Reaches out for objects - wants to have it handed to him;
- Pushes object away - does not want it;
- Pouting - displeasure.

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In reviewing the stages of communication development, teachers and parents can determine where the individual is functioning, and have a general idea of what the next step could be. After carefully assessing where the individual is functioning and what should be next, a program of communication should be activated. Suggested activities are contained in Hunter, Schuchman, & Friedlander (1972), Malloy (1961, 1972), and Wood (1969).

Two of the most frequent problems in developing a communication program are that (1) it becomes isolated from the total program, and (2) many times the activity is too difficult for the individual to achieve success. Examples of these two problems can be readily seen when the teacher brings out the "language kit" and begins to perform. As she does most of the talking, the teacher requests the group of students to participate in complicated songs (finger play), pledge to the flag, or "share and tell time".

As one develops a communication program, the following guidelines should be considered:

- Plan activities whereby each individual can achieve success in communication;
- Instructions and directions for activities should be simple and uncomplicated;
- Materials should be simple, solid, and familiar.

Activities which are conducive for individual expression include various forms and levels of art, music, and physical education. Through these activities, individuals express their feelings and ideas.

Activities such as role-playing, free play, puppetry, and field trips make communication easier for the individual who is just beginning to communicate verbally.

In working with those who are not yet communicating, it is important to vary methods in order to get their attention. For some, it may be gained by a loud noise; for others, by a sudden and obvious quiet time. When attention is obtained, dialogue can begin by repeating the sounds the individual makes. Later, the dialogue can be continued by having the individual repeat the sounds made by the teacher. This exchange becomes the basis for more advanced sound-making, and perhaps, at a later date, for verbalization.

Even at the beginning stages, such equipment as tape recorders, two-way radios, and language masters can be used to develop communication skills. It is important to remember that such devices as radios, televisions, and record-players can be stimulating if used occasionally, and not constantly.

RECEPTIVE LANGUAGE TRAINING

Ruth Sower
Temple University

Today we have divided the topic of language into two parts: Benson has discussed expressive language programming, and I will discuss receptive language programming. It is important that we see language programming as a whole, with receptive language generally coming first and expressive language following. With normal children, receptive language is learned through the

child's questions and by his listening and observing. To teach receptive language to a severely-handicapped child, a systematic approach must be used, which includes the total language learning experience. It must begin with a theory of language and include educational methods.

Language is defined (Brown, 1965) by certain design features which, taken together, make it possible for a creature with limited powers of discrimination and a limited memory to transmit infinitely many meanings. In normal children language develops on a world-wide timetable probably governed by the child's biological development. In the first year, a child starts to babble; by the end of the second year, he is saying two-word sentences, and by the end of the third year, he has learned a large part of the basic grammatical apparatus of the local language.

In considering language development for the mental retardate, the definition of retardation by the American Association of Mental Deficiency should be considered: mental retardation refers to sub-average general intellectual functioning which originates during the developmental period, and is associated with impairment in adaptive behavior. Schiefelbusch (1965) suggests that the critical issue in that statement is "impairment in adaptive behavior". Language impairment would greatly hinder the retardates' adaptive behavior in the entire range of interpersonal, social, and intellectual behaviors.

Luria (1963) said that retarded children cannot fixate the significance of experience as normals do, and therefore language is not an efficient mediator for learning experiences; this failure is an expression of neurodynamic distrubance of the "second signalling system". This approach lends some understanding to the nature of the retardates' language problem. Not only are speech and interpersonal communication impaired, but the means for higher level cognitive development also are impaired.

Schlanger (1967) noted the following negative characteristics which appear to affect the retardates' language functioning:

1. Poor auditory retention span (auditory memory)
2. Short attention span developed through negative training and/or inherent in the biological mechanism
3. Linguistic ability deficient as demonstrated by poor grammar and minimal content
4. Perseverance in oral expression
5. Minimal creative or imaginative pursuits
6. Inability to transfer meanings
7. Absence of self-criticism
8. Poor evaluation and organization of perceptual clues
9. Frustration in communication activities leading to withdrawal and lowered thresholds of frustration.

At present there is no means for correcting or developing the basic language processes as they are described by psycholinguists, but therapy is available on a level that can improve the retardates' level of adaptive behavior. In most cases, such treatment applies the Skinnerian paradigm to speech development and speech therapy. The following reviews of behavior modification techniques represent prime examples of the Skinnerian approach.

Outlined briefly by Schiefelbusch (1965) the steps in language behavior modification for the retardate include: (1) determine the child's current level of performance; (2) determine the reward or reinforcement technique; (3) shape the behavior of the child selectively; (4) program appropriate steps for the child; and (5) set realistic goals.

Drash (1968) and Drash and Leibowitz (1968) report the development of language in autistic and non-verbal children having IQ's no higher than 40. In training five male children, age range three years four months to eleven years seven months, the conditioning procedures followed the operant experimental paradigm of successive approximations and included: (1) random picture identification training, during which a positive reinforcer (usually food) was paired with a discriminative stimulus consisting of a buzzer and a light; (2) reinforcement of any verbalization; (3) reinforcement of imitative verbalizations; (4) reinforcement for imitative object identification; (5) reinforcement for spontaneous object identification; and (6) reinforcement for functional application of conditioned speech. The parents also were trained in this techniques. Results varied from a terminal vocabulary of ten words to a terminal vocabulary of 200 words. Number of sessions conducted in the laboratory varied from 30 to 53 one-hour sessions per subject. For children who lack the imitative vocal response at 1½ years, the investigators stress the need for early intervention with operant techniques.

In a more general way, how can we teach receptive language? According to the workshop text, the Fokes lecture, and the other language readings, talking with the child is most important; this means a simplified vocabulary, short sentences, and clear units of expression at an unhurried pace with plenty of repetition and special emphasis and repetition of key words. The subject matter must be in the present; the past has very little meaning; the immediate future is rather better understood. This suggests that descriptive narrative about what is going on right now is the best way to present language. For a more systematic approach to receptive language instruction, the Chalfant, Kirk, and Jensen (1968) program includes a procedure for assessing the child's receptive language development, a specified language curriculum, teaching procedures and measurement procedures for evaluating the child's language progress.

These examples of the approach indicate that the method is well-suited for assessing and teaching receptive language. The child's receptive language is tested through a series of stages:

Stage 1: test the child's imitative motor behavior
Stage 2: test the child's response to the command, "touch this"
Stage 3: teach the child to imitate the touching act
Stage 4: teach the child to respond to the command "touch this"
Stage 5: teach the generalization of the verbal command
Stage 6: test recognition of object words.

The receptive language curriculum is centered around the child's experiences. The names of his family and his own come first. Next, household words are taught; next, play-yard terms; and then community. The sequencing is based on relevancy, physical proximity, and frequency of encounter. Concrete concepts are taught first. Also, consideration is given to auditory discrimination. Generally, short words are taught first.

The following are brief examples of the teaching procedures.

Lesson 1: introduce the word name "spoon" with the object spoon
Lesson 2: teach the child to link the word name "spoon" with the object spoon
Lesson 3: introduce the word name "glass" with the object glass
Lesson 4: teach the child to link the word name "glass" with the object glass.

Test Request

1. Place three glasses in a row on the table in front of the child; say, "touch a glass"
2. Place two glasses and one spoon in front of the child; say, "touch a glass"
3. Place a glass and two spoons, one on each side of the glass; say, "touch the glass"

These few examples of the approach reflect the systematic nature of this program. In summary, for most children receptive language is learned without any planned instruction; it is part of a larger skill, and most language programs deal with it as a small step in the total process. For children having severe handicaps, receptive language may be the highest level attainable. It will require careful program planning for many of the children included in our workshop classes.

PROGRAMMING FOR COMMUNICATION

Dianne Manfredini
Philadelphia Association for Retarded Children

The teaching of communication may appear to many to be an exercise in frustration. This need not be the case if several techniques, which have been found to be successful in working with the low-functioning child, are used.

In order to ensure the development of language in realistic and varied contexts, the teaching of language skills must be an on-going program, involving every activity throughout each day. Verbalizations should be made by the teacher describing every activity in which the child is engaged. These verbalizations should consist of simple (subject, verb, object) sentence formations in the present tense. Certain words should be repeated in an effort to attach meaning to them. For example, a child may be pouring his own cup of juice. The teacher might verbalize this activity in the following manner: "Johnny is pouring juice", "pouring juice", "juice".

This same technique can be applied when a child picks up a toy, walks around, washes his hands, jumps, etc. Any overt movement by the child may be verbalized similarly. While the teacher is busy verbalizing a child's actions, the child's own spontaneous verbalizations must not be overlooked. Every spontaneous verbalization made by the child should be reinfored. An effective reinforcer, teacher attention, can be used by having the teacher imitate each sound the child makes. When the child repeats his verbalizations by imitating the teacher, the teacher can begin to lengthen the amount of time

during which a sound is made. A next step might be for the teacher, in imitating the child, to raise or lower the pitch of the sound made by the child. This provides the child with a model for developing intonation, yet is based on sounds he has already produced. Another useful technique is to add a syllable to an extended sound in order to see if the child will imitate it. Thus, if the child has said, "eeeeee", the teacher might repeat, "eeeeee-ah".

The need for reinforcement of spontaneous speech has been delineated; however, the need for reinforcement of speech attached to specific objects must also be stressed. Developmentally, word approximation is at a higher level than spontaneous speech sounds. Within this stage, the teacher should not be concerned with correct articulation or pronunciation, but rather with teaching the concept that every object and action can be named. The stress, therefore, is not on remediating speech problems, but rather on developing and eliciting meaningful language. Working within a framework of successive approximations, each attempt toward making a correct word, even if only the initial consonant or vowel is used, should be rewarded. At this point, a mirror may be used to reinforce correct lip and tongue placements for sound production.

Along with this, specific exercises for musculature development can be initiated. Exercises such as sucking, licking, and blowing a variety of objects are excellent tools for developing muscles necessary for sound production.

To reinforce the concept that language communicates meaning and intent, the child should be encouraged to explore many paths of communication. As the teacher speaks, it is helpful for him to use gestures which afford the child as many clues as possible for correct interpretation. Consistent gestures accompanying consistent verbalizations may often make it easier for the child to follow directions. Concomitantly, any form of communication used by the child should be accepted and verbally interpreted for him. Stress must be placed on the fact that language has meaning.

Materials used to teach specific names should always be concrete. Pictures are abstract and are often difficult for the child to associate with a concrete object. Often the low-functioning child will have difficulty in responding to or imitating the teacher's speech, but may respond well to inanimate objects. Devices such as a talking doll or bear often appeal to children. With this device a teacher may talk through the doll or bear. Through use of the objects, the teacher need not be visible; she can communicate with the child through the doll or bear. Other devices, such as "Tokbaks" fit over a child's ears, and by amplifying the sounds he makes, offer him immediate feedback. A "Teletrainer" (two telephones that may be used for the teacher and child to communicate) also encourages the use of speech.

In summary, language should be stressed throughout the child's day in simple but meaningful speech. Imitation of a child's speech may be necessary before the child will be able to imitate the speech of the teacher. Building on a child's skills, however minimal these skills may be, and rewarding approximation toward specific verbal goals should make the task of developing speech one which can be shared and enjoyed between the teacher and the child.

PROGRAMMING FOR COGNITIVE DEVELOPMENT

Beth Stephens
Temple University

One of the most challenging tasks in the entire field of mental retardation is programming to promote cognitive development in severely subnormal and difficult retardates. The decades past have been characterized either by no effort or by unsuccessful effort. Now, however, we are entering an era of successful endeavor. Major reasons for these positive results are: (1) the realization that the remedial activity must be congruent with the individual's current level of functioning; and (2) the availability of cognitive scales which measure lower levels of functioning: i.e., development from birth onward. (It is now possible to determine the functioning level of even the severely subnormal, and to outline succeeding levels.) Provided with this information, one seeks an activity which will serve to promote development from one level to the next. However, as one embarks on programming attempts, a reminder is given: you, as programmer, cannot make another person develop cognitively, but you can provide him with a variety of developmentally appropriate opportunities to interact with people and things, and, in turn, this interaction should foster cognitive development.

An overview of the sensory-motor sub-stages and examples of activities follow:

1. Reflex: Behavior which is characteristic of this first sub-stage includes sucking, kicking, and palmar grasp. At this time, infants also engage in visual pursuit of objects. As one worker in the field noted: "Although the infant 'looks' like mad, he can't do anything about it motorically."

To promote palmar grasp, fasten the infant's fingers over an object: e.g., dumb-bell rattle. Engage him in manipulated adduction and flexion of the legs. Tickle the side of his face with a feather to promote rooting and sucking behavior. Exercise and strengthen lip and tongue muscles by having him suck a pacifier. In order to promote visual interaction, pass large brightly colored objects across his field of vision.

2. Primary Circular Reactions: At this sub-stage there is ability to follow an object (visually) through a 180° arc. Hand-watching behavior is observed, and objects are grasped when both the hand and object are in view. There is ability to glance alternately from one object to another.

To promote visual tracking, hold a rattle in front of the child. If eye contact is not made immediately, shake the rattle, and turn the child's head until he is looking at the toy. As he attends, slowly move the rattle in a 180° arc.

As the child observes his hand, bring a rattle into his field of vision, and touch his hand with the rattle. If no grasping attempt is made, curl his fingers around the toy.

Objects are explored by mouthing; provide opportunities for this to occur. Position objects so that the infant will contact them as he kicks his feet and waves his arms.

3. Secondary Circular Reactions: During this period, the infant's glance will linger at the point where a slowly moving object disappeared. If a familiar object is partially hidden, it is recognized and retrieved (and thus there is evidence of mental imagery). At this stage an interesting object is kept active or in motion by means of secondary circular reactions.

Pass objects across the infant's visual field with increasing speed in order to promote rapid tracking.

Further the development of simple motor schemas through demonstrated use of a noise-maker (which requires shaking or hitting); then present the infant with the object. If he does not retain the toy or use it spontaneously, guide his hands through the appropriate movements.

Simple hiding games may be engaged in. Initially, the familiar object will be only partially hidden. Over time, increasing amounts of it will be concealed.

4. Coordination of Secondary Schema: At this sub-stage, interest in objects is evidenced as new objects are accorded prolonged exploration. If the trainer performs familiar motor schemes, the child will imitate them. Release or the ability to "let go" is developing: there is evidence of picture recognition.

Because there is understanding of the relationship between the container and the contained, work with nested cylinders is appropriate. Initially, two which differ markedly in size are presented; later, the number of cylinders is increased and differences in size is lessened.

Picture recognition is promoted by initially presenting life-size, life-color photographs of familiar objects. After the transition from the real object to a pictorial representation has been accomplished, less familiar objects may be presented. Labeling accompanies presentation.

Games which involve retrieval of a completely hidden object can be initiated. Blocks and beads can be dropped into containers.

5. Tertiary Circular Reactions: Reasoning has proceeded until now the child can make an object perform its interesting activity by supplying the appropriate manipulation himself. He also is capable of discovering new ways to obtain a desired goal. Social interaction is evidenced through the schema of "showing".

Noise-making pull-toys are appropriately supplied at this sub-stage. Wind-up toys, musical tops, etc., can be supplied for the child to operate. Activities which require location and identification (pointing and naming) of objects can be used to promote language, socialization and classification. Understanding of gravity is gained in activities which involve rolling of objects down inclines, and pulling strings to obtain toys from overhead.

6. Invention of New Means through Mental Combinations: Deferred imitation of actions indicates the presence of memory and mental imagery and their

use by the child. Ways are explored to activate a newly-acquired mechanical object. There is ability to make detours in order to retrieve an object from behind an obstacle. Foresight is shown in the selection of round objects to fit round holes, square ones for square holes, etc.

Games which require circumvention of obstacles to obtain objects are appropriate: e.g., retrieval of a ball from behind a chair. Ability in problem-solving can be extended to stacking rings sequentially, working with simple form boards, inserting and taking objects from containers. Tasks which involve imitation of a series of simple actions may be introduced. Activities involving picture labeling are appropriate. Simple sorting tasks - e.g., balls from blocks - may be attempted.

As the child moves from the sensory-motor to the pre-conceptual stage, scales which set forth sequential development again may be used to suggest appropriate activities. Haeusserman's Developmental Potential of Pre-School Children (1958) provides an excellent framework. Appropriate test tasks are listed for each of six mental age intervals between the years two to six; with adaptation and extension these may become sequentially arranged program activities. There is provided a copy of sequentially listed activities which are derived from the Haeusserman Test, and which are arranged under the following headings: (1) Memory; (2) Discrimination; (3) Spatial Orientation; (4) Amount Concepts; (5) Relationships; and (6) Language. Ways are devised by Haeusserman which permit presentation of the tasks to children with various types of handicaps.

Discussion by Painter (1968) of a program designed to promote conceptual development in the pre-conceptual child includes a listing of activities devised to establish skill in space, time, number, and body image concepts, as well as in categorical sorting. Connor and Talbot's An Experimental Curriculum for Young Mentally Retarded Children (1966) also lists activities designed to promote intellectual development in the pre-operational child. In addition, Lavatelli (1970) has provided an early childhood curriculum which is termed a Piaget program: i.e., it evolves from activities and processes characteristic of the pre-conceptual period. It is appropriate for any child functioning at this level, whether he be mentally retarded or normal.

As the child moves from the pre-conceptual period to the stage of concrete operations, there is a proliferation of readiness and elementary school activities which is available. An on-going project by Cawley (1972) provides math activities for the mentally retarded, and Kolburne (1965) outlines methods that have demonstrated their effectiveness for teaching writing, spelling, and reading to the retarded.

A potpourri of activities alone does not assure effective programs; knowledge of the child's level of functioning, his abilities and disabilities, and skill in the use of methods which are effective in eliciting attitudes conducive to learning also are needed.

BEHAVIOR PROGRAMMING

Irvin Guyett
Dixmont State Hospital

There are two major dimensions of behavior for which the type of behavioral programming being discussed is relevant:

1. when there exists a high rate of inappropriate behavior; and
2. when there is a low rate or absence of desirable behavior.

In the first instance, the problem is to decrease or eliminate the frequency with which the behavior occurs. In the second area, the goal is to develop and/or increase the frequency of appropriate behaviors or responses.

For purposes of behavior programming, it is necessary that the relationships between a child's responses and their consequences be clearly established. The event which follows the child's response may be positive or negative in nature, depending on the effect one wishes to have on the imitating actions. When a response precedes a positive event, the frequency of that response will increase. Conversely, withholding the expected positive consequence will result in the diminution of the preceding response. This removal of a positive reward may be viewed as a type of punishment. Another type of punishment is the introduction of something relatively unpleasant: i.e., a spanking, verbal scolding, time-out, etc. This negative consequence is expected to decrease the rate of undesirable behavior. Thus we see that behavior may be controlled by controlling its consequences.

Too frequently, however, it is difficult to determine what is controlling a particular behavior. This is particularly true when the observer is one who is subjectively involved in the situation. Consequently, the charting of the behavior, its frequency, and the circumstances under which it occurs, is helpful in obtaining an objective picture of behavior and its contingency factors. From this data, stimulus-controls may be established. By control of the stimuli and of the consequences of behavior, control of the behavior itself is then permitted.

A. Program Development Guidelines

One may think of a school or agency as a cluster of people with specific competencies in specific areas, each of whom has an impact on behavior and its consequences. The construction of a behavior program, therefore, must realistically consider the role of each person. Goals must be agreeable to all parties involved, and well-specified in all dimensions.

The development of the individual's program must take into account the extent to which the child is able to perceive the cues and situations set up for him. Once this is determined, the content of the program must be blocked off into steps: i.e., small units of sequential stimulus-response tasks which approximate, and ultimately attain, the desired goal. In focusing on behavior, the tasks may be arranged in a continuum of severity: i.e., not problematical to least problematical.

The schedules presented in Table 5 are built on four steps that lead to specific objectives. In general, however, working with five steps seems to be the most convenient. Besides allowing one to break objectives into a series of training levels, it also provides a commonality, a basis for the various responses on which we are working and a means of comparing people across several dimensions.

The program may be set up in terms of Behavior Improvement Training Schedule (BITS) for a whole classroom, covering all the students in the class. Each child is observed in this setting, and given a rating in terms of how often he emits the response in question. The objective may be the improvement of the child's ability to sit still during class periods. In this training program, the first step would be to have him sit just for one minute without g tting out of the seat. The second level would be to sit for five minutes, the third for twenty minutes, the fourth for 34 minutes, and the fifth for 45 minutes out of an hour. Having the five steps set up, one may look at the whole class and count how often the behavior occurs during a particular period of the day. On the basis of the count, each child may be categorized. Johnny may be functioning on the first level, Larry on the second, two other students on the third level, and so on. A reinforcement schedule may then be set up for individuals as well as for the class.

The availability and feasibility of possible reinforcements must be addressed when setting up a program. Reinforcements should be individualized. Things that serve as reinforcers for one child may not be effective with another in the same classroom. Reinforcers may be by nature (1) social rewards, such as praise, or (2) tangible ones, encompassing a wide range of items.

In summary, construction of a behavioral program involves:

1. identifying the behavior to be extinguished or reinforced;
2. delineating the change process by establishing small, specific, goal-oriented steps that are within the child's capacity;
3. establishing reinforcement conditions;
4. involving all personnel having contact with the child in the implementation of the program.

Throughout the program, it is essential that the child be given continual feedback regarding his competencies. In this way, the child begins to discover the positive aspects of his personality, and it is this discovery which then enables him to move from external, tangible reinforcement to the level at which the completion of a task or the acquisition of a new skill becomes an intrinsic and self-sustaining reward.

Too, note again, <u>sequences used in program material must correspond to those measured by developmental assessments</u>.

I. Guyett
Dixmont State Hospital

TABLE 5

Dimensions of Self-Care Chart as used in HIP Cottage

1.	2.	3.	4.	5.
Personal Hygiene Unkempt, sloppy, strong body odors	Showered, shaved within 24 hours - says brushed teeth	No body or mouth odor from 1 - 2 feet; hair clean; closely shaven	Hair combed or trimmed	Nails, ears, other hygiene adequate
Grooming Appearance Missing, disheveled clothes	All basic clothes on, fastened; shoes, socks, shirt, pants, underwear	Clothing neat, tucked in, pressed but not crisp; unspotted by food; can have 3 ½" prior stains	Clothes sewn, fit well, not baggy	Clothes tasteful and appropriate for most informal places - no spots, pressed
Living Area Not out of bed; area a mess	Up by 7; no dirty laundry in area; bed made carelessly	Dresser neat, all clothes & items in rows or stacked. Personal belongings neatly folded or stored.	Bed made neatly; dirty items readied for laundry on own initiative; prepares & checks laundry slips correctly	Living area very clean and tidy
Posture Slouches, shuffles, avoids eye contact	Some eye contact during discussion	Good eye contact during interaction; does not shuffle	Walks erect; does not slouch	Walk & movements are not slow or hesitant
Responsiveness Is led in and makes no response to comments	Comes on own, nods or grunts in response to comments	Answers w/ sentence (3-4 words) that makes sense	Tends to smile pleasantly; asks questions or volunteers comments	Inquires or suggests ways of improving his self-care

TECHNIQUES OF BEHAVIOR MODIFICATION

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Behavior modification is not a way of explaining a particular behavior, but rather a behavior orientation technique, and can be construed as instrumental in learning. The organism is responsible for the changing of his environment to receive the reinforcement that the behavior modification program offers. Thus, the reinforcement technique may allow one to change such cognitively structured things as attitude. Behavioral principles may be used to bring a child through the beginning Piaget sensory-motor experiences, and to enable him to make greater strides in involving himself in his environment. The effective use of behavior modification techniques in an educational situation is dependent on:

1. clearly defining the behavior to be changed or emphasized;
2. evaluating the context in which the behavior occurs with particular attention to the antecedents and consequences;
3. determining appropriate reinforcers;
4. the consistency with which the program is implemented.

These techniques may be used with an individual child or with a group, and, with proper instruction, the program can be transferred into the home or cottage. Behavior modification can be an effective component of a total program and, as such, can facilitate the progress a child makes in many dimensions.

The following are some important "DO's and DON'T's" which must be taken into consideration in order to have a functional behavior modification program:

DON'T's:

1. Don't assume that by reading printed materials on behavior modification you will be able to modify behavior. Practice with different techniques, and develop a program which fits the needs of the child and his environment.

2. Don't expect your results to occur overnight. For some children, behavior modification is an on-going process. Proper stimulus control must be maintained for results to occur.

3. Don't ever "go it alone". If a program is to have any success, you must draw in all people involved with the child and/or his environment. Get them to comment on the behavior of the child in the situations with which they are familiar. It is important to have input.

4. Don't ever assume that the only problem a child has is mental retardation. Mental retardation is often a symptom of a syndrome. This is an especially important reason for involving other people in your programming.

5. Don't ever recommend institutional placement for a child unless it is absolutely necessary! The dangers of institutional retardation are great.

6. Don't ever assume that a child is so low-functioning that he is untrainable. It is up to you to bring responses out of the child through programming for his needs.

Avoid 24-hours-a-day programs. Plans for every minute of the day are often not specific enough to fill the child's needs properly. Plan for and block out a small portion of the day. Often behaviors that you feel need modification may only exist during certain situations at certain times of the day. Use other people and keep working with the child so that everyone is kept informed of the program goals.

7. Don't ever assume that behavior modification is the only way to program for a child.

DO's:

1. Consider the three classes of behavior modification programming:
   a. Building in: introduce some set of responses for their own sake. Build-in responses to such things as feeding and self-care.
   b. Fading out: fade out some behaviors for their own sake. Such behaviors as hyperactivity, self-abusiveness, and withdrawal.
   c. The use of these techniques may help to bring the child through a stage or a pattern of behavior which has held him back from the next developmental level.

2. Be very practical in the selection of the behavior you are interested in programming. It is important to keep accurate records to find out what is happening.

3. Use the proper equipment for record-keeping. The following are some useful record-keeping materials available from Behavioral Research Co., Kansas City, Kansas:
   a. wrist tally board
   b. the tally card box
   c. timer (minute)
   d. counter
   e. golf score keeper
   f. cook's timer

All of this equipment is designed to assist in charting and counting behaviors. They are small, and easily carried on the person.

4. All behaviors are caused by antecedent environmental conditions, regardless of any other factors which may enter into the causation. It is therefore important to have input from the people who know the child's psychological aspects.

5. Use small steps. Build in proper responses, and also fade out inappropriate ones.

6. Stress greatly the use of parents in your program. Keep them well informed on programming and progress.

DEMONSTRATION

Two children, a hyperactive five-year-old and an extremely passive, motorically involved 15-year-old, were the subjects for a demonstration involving the use of behavior modification techniques.

The initial phase of the demonstration involved observing and recording the frequency of a particular behavior: i.e., did the hyperactive child leave his seat? how long did it take the passive child to reach for an object? In the first instance, the emphasis was on increasing length of time the child remained in the chair; in the second, on shortening the amount of elapsed time between presentation of an object and the child's response to it.

Both children reacted favorably to tangible reinforcers, but not to adult praise. Immediate reinforcement was used for the passive child, intermittent reinforcement for the hyperactive child.

Discussion subsequent to the demonstration focused on the use of demonstrated techniques in a classroom situation.

PROGRAMMING FOR SOCIAL AND EMOTIONAL DEVELOPMENT

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Two types of activities form the basis of a program designed to foster emotional and social growth, namely those activities which promote the acquisition and/or refinement of a particular type of skill - e.g., thumb and fore-finger opposition - and those activities which focus on the use of a skill for a particular purpose - e.g., buttoning. The former are developed in a variety of activities throughout the day, the latter in specific situations.

The initial step in actual programming, then, is to identify the particular skills required of a child in each of the social and/or emotional program areas: eating, dressing, toileting, personal hygiene, interpersonal relationships, etc., and use of the profile data to determine in what other contexts that type of skill occurs. For example, activities designed to develop speech musculature may aid the child in learning to chew food; work on fine motor skills may assist in teaching a child to feed and dress. The pairing of program activities in one area with the skill needs of another facilitates the learning process since it allows the programmer the opportunity to teach and reinforce in many situations without the needless repetition of an activity - e.g., dressing and undressing - in appropriate contexts. Likewise, while a particular segment of the day may be devoted to demonstrating appropriate means

of expressing emotion or developing peer relations, myriad opportunities exist within the total day's structure to introduce these into other program areas. For example, motor activity can be set up so that the child is working or sharing with another child; a language activity may involve performing before a group; in this latter case, both the performer and the observer are learning more than language!

As with any other program area, specific skills must be presented in meaningful contexts: i.e., undressing is taught in relation to toileting, bathing, or changing, not as an isolated program segment. Likewise, play patterns are developed in natural play situations, not in artificial activities. The same program principles stressed in previous presentations are applicable here, namely:

1. activities must be based on the skill a child has, and, through carefully sequenced small steps, lead him to the desired new skill level;

2. materials must be those a child can handle, particularly when dealing with clothing and utensils; adaptations, such as a two-handled cup, velcro stripping instead of buttons, rimmed plates, or special grip pieces on spoons, forks, and toothbrushes, should be made whenever necessary;

3. limits and expectations should be carefully defined and should be consistent;

4. attempts and approximations, as well as accomplishment, should be reinforced;

5. the general climate of the classroom must be one which permits and encourages a child to explore, to initiate, to grow; structure is not synonomous with regimentation;

6. verbal commands or instructions should be simple, clear, and, whenever possible, accompanied by gestural cues;

7. parents and/or ward or agency personnel should be encouraged to implement the classroom program in appropriate non-school situations, and should be carefully instructed as to the step-by-step procedures used; this prevents confusion on the child's part, and removes the task from a school situation and places it in the total life dimension.

In summary, social and emotional development is both task-oriented and program-pervasive. Every situation which involves environmental or interpersonal interaction, which elicits life skills, which permits, encourages, or teaches a child how to function appropriately, may be construed as part of the total social/emotional program. It is the attitude generated, as well as the skill attained, which serves as the measure of training.

PARENT/ATTENDANT TRAINING

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The effectiveness of a classroom program for the low-functioning child is influenced by the type of training that child receives in non-school hours, be they in the home or on the ward. Consequently, the training of parents and child-care personnel in behavior management techniques is of paramount importance. Following is a description of a child management course which attempts to provide participants with specific techniques which can be used or adapted to meet the needs of a variety of situations.

Basically, this Child Management course is designed for parents, and covers a six-weeks training period. Detailed description of it is provided in the belief that it can be used or adapted to meet the needs of a variety of parent-training situations.

A. Course Objectives

The course pursues a variety of objectives. The basic goal is to instill in the participants a basic understanding of the principles of learning theory; an understanding which will enable them to apply those principles to a wide variety of situations. To reach this goal, two guidelines are important:

1. the participants are dealt with as teachers;
2. the approach is to instill a general type of knowledge; the participants should successfully apply the ideas and information which they derive from the classes to at least one situation at home or on the ward: i.e., they should go through each step involved in setting up and carrying out a program for the child. The natural inclination and desire of the participants is to program immediately for every problem situation that arises. If this is done, they are likely to take from the course a number of specific programs for specific problems, but little understanding of the general methods which they can apply to other problems.

The first goal, then, is to acquaint the participants with the very basic tenets of learning theory and behavior modification. The second goal is to help them gain some proficiency in applying these ideas to their own child to bring about the desired behavioral changes in him. And the ultimate goal is to help the child: i.e., to bring about real changes in the child at home.

B. Course Format

The course is designed to last six weeks. At the end of that time participants are polled on their preference for discontinuing the classes at that point or for scheduling two additional sessions before concluding. The trainers must use their discretion in judging the usefulness of additional meetings, and advise the group accordingly.

Each session lasts a minimum of two hours. Beyond that point, the classes can last as long as the parents demand. It is not unusual that the sessions last three hours, and the extra time is useful for developing stronger rapport. Again, the trainers' discretion comes into play in judging what time is profitably spent and what time is superfluous.

The course can accommodate any number of participants. Groups in the past have ranged up to 45 families, which have then been divided into sub-groups of no more than 12 families. Obviously, the more people attending the course, the greater the number of group leaders required. For example, in the course which included 45 families, four group leaders divided the parents, and programmed individually with their sets of parents.

As the course begins, field visits are scheduled. Program appropriateness increases when the trainers designing the programs are acquainted with the child, and are familiar with the living situation. Rapport is established when the trainers demonstrate their involvement early in the course. The visits are suggested, but not imposed, by the trainers. The participants are given the choice of inviting or not inviting the trainers into their homes or institutions. The visits, in order to be helpful in determining appropriate programs, should be completed early in the course.

The first half of each session is devoted to a presentation of the factual material. The material can be supplemented with suggested reading material. Question/answer sessions involve the parents and supply feedback for the trainers.

The second half of each session includes the individual programming. This is done in a small group - i.e., 12 persons or less. Both parents and trainers make program suggestions based on the detailed descriptions of the problems.

The initial session serves two purposes. A general description of the course is put forth, including the philosophical biases of behavioral science. On the basis of this overview, the trainees are charged with making another decision - whether or not they will benefit from the rest of the course. Also, during the first session a detailed explanation of behavioral observation and charting is given. The participants choose their first project. The parent participants must pick out a behavior, specifically define it, and chart it for a week, returning the graph of the behavior to the next session.

The subsequent sessions delve more deeply into the specifics of behavior management.

C. Course Content

1. Behavioral observation = counting the frequency of a behavior
   a. Defining the behavior precisely
   b. The time of observation must be the same daily
   c. The place of observation must be the same daily
   d. Recording the observation
      (1) accurate
      (2) convenient
      (3) must not interfere with the natural occurrence of the behavior being counted

2. Data collection = charting the observation
   a. Simple behavioral graph
      (1) frequency recorded vertically
      (2) days recorded horizontally
   b. Note any changes on the graph
      (1) recording "amount of time" rather than "number of occurrences"
      (2) scaling the graph to include very high-frequency behaviors
      (3) shifting dates of observation
      (4) special circumstances on given dates
   c. Use "Program Line" to denote changes in reactions to the behavior
   d. Heading of the graph
      (1) name of the child
      (2) clear description of the exact behavior being counted

3. Positive reinforcement techniques = rewarding "good" behavior
   a. A reinforcer is any object or event which brings about a positive (good) feeling in the person receiving it
   b. Kinds of rewards
      (1) tangible rewards (examples: money, food, toys)
      (2) social rewards (examples: attention, touching, smiling)
   c. Rewards must be given immediately following the appropriate behavior that you wish to reward
   d. Law of Behavior = any behavior that is followed by a positive reinforcer will occur more frequently in the future.
   e. Scheduling rewards
      (1) initially reward the behavior at each occurrence
      (2) gradually decrease the number of rewards given
      (3) never discontinue rewarding the behavior altogether
      (4) use tangible rewards at first
      (5) always couple a social reward with a tangible reward
      (6) gradually the tangible reward can be withdrawn, and social reward alone can be used.
   f. Shaping
      (1) set the goal that you wish to attain with the child
      (2) break down that goal into as many steps as are realistically attainable
      (3) reward the child for attaining each step
      (4) once the first step has been attained, move to second step, etc.

4. Behavior extinguishing techniques = weakening "bad" behavior
   a. Ignoring = giving no feedback for a particular behavior
      (1) paying no attention at all to the behavior
      (2) initially the behavior will occur more frequently
      (3) the process takes a good deal of time before the behavior drops out
      (4) once the behavior stops, it will be permanently stopped
      (5) the process takes a great deal of "will power", perseverance on the part of the parent

b. Punishing = giving negative (painful) feedback for a particular behavior
   (1) making the result of a behavior painful
   (2) can include physical pain, loss of material things (food, toys, TV), loss of privileges, etc.
   (3) children learn to avoid the pain, stop the unwanted behavior
   (4) generally brings about immediate results
   (5) is effective only as long as the pain, or threat of pain, is present; has temporary results, so must be repeated often
   (6) has residual effect of making the child and parent feel bad

c. Time-out
   (1) isolating the child from nearly all stimulation
   (2) neutral: i.e., should not be punishing or rewarding
   (3) place child in area where stimulation, especially visual stimulation, is effectively cut off
   (4) keep child there for a short time (1-3 minutes), thus giving him opportunities to perform the acceptable behavior
   (5) child should be told he is being put on "time-out", but nothing more should be said until the time is up
   (6) the area should not be frightening; it should be dull, but not an enclosed (i.e., with a top, very small, dark) area
   (7) can be imposed immediately
   (8) it is adaptable to most situations (home, shopping, classrooms, etc.)
   (9) has an effect similar to ignoring, but the initial reaction is usually less pronounced

5. Retraining = used when the child has unacceptable behavior that is to be replaced by an acceptable behavior
   a. Weaken the undesirable behavior using the techniques discussed above
   b. Strengthen the "competing" behavior at the same time
      (1) use methods discussed above
      (2) "competing behavior" = opposite behavior; a behavior which, by its occurrence, makes it impossible for another behavior to occur (example: selfishness/sharing, temper tantrums/cooperating)
      (3) keep from creating behavioral "vacuums", which the child will eventually fill with a behavior of his own choosing
      (4) this is the "Programming" aspect of training parents

It should be evident from the preceding descriptions of the course format that the participants are given a number of choices during the course. These choices affect the path that the course follows. The participants must feel that their choices are meaningful, and that they will be honored. They are forced to respond to the course when given the responsibility for shaping part of that course themselves. The resulting increased involvement is reflected in a high rate of return to each session and in a high degree of work done outside the session.

In making program suggestions, prime consideration must be given to the participants and their own particular thresholds of tolerance. A person must be able to live with the program which is set up. If the parent is unfortable with the program, for any reason, it is very likely that it will not work, no matter how technically sound the program is.

Likewise, the living situation must be strongly considered in any program. It must be feasible for the program to operate within that setting without drastic alterations. The home or ward should be the guideline around which programs are shaped, for regardless of the technical purity of a program - no matter how closely it fits into theoretical molds, no matter how tailor-made it is to the child's problem - it must fit into the range of practical acceptability of both the implementor and the physical surroundings if it is to have any chance of success.

Consistency must be continually stressed with the participants. They must be reminded to react in the same way every time a programmed behavior arises. This is important in assuring some measure of success in any program attempted.

To any extent possible, the situations at home or on the ward must be made as predictable as possible for the child. In any instance, the child should be able to predict for himself with some certainty what reactions his behaviors will elicit. Through the consistency just mentioned a high degree of predictability is added to the situation. Another method of increasing predictability for the child is the statement of all programs or "rules" and their consequences before they are enacted. This is useful only to the extent that the child can understand, but many modes of communication should be tried in order to reach that understanding. The central ides is fairness to the child, and the concomitant upgrading of program results as the fairness to the child is increased.

The use of many positive reinforcers can never be over-emphasized. While negative reinforcers, punishers, and time-out all merit mention, the overriding emphasis must be placed upon positive reinforcement.

The course must be flexible, and especially sensitive to the on-going feedback of the participants. When suggestions are made, they should be acted upon as soon as possible. Especially important are the suggestions made at the conclusion of the course.

Everyone must have a chance to do a good deal of programming if this skill is to be developed. For this reason, all programming is done with the whole group participating. One by one, the participants describe in detail the child's problem (that for which a program is being designed). The entire group, then, volunteers its reactions. This multiplies the number of practical situations which are useful in making the behavior theory take on actual importance.

The programming, however, should begin with one behavior only. A skill built in a careful, step-by-step fashion will yield a wider range of applicable talents for programming than a skill built upon an unorganized

array of specific problem situations. A good deal of material is presented to the participants, and a "one-thing-at-a-time" approach avoids confusion that can arise when several programs are being applied to several specific behaviors.

To repeat an idea mentioned earlier, the participants should be told from the outset that they will be treated as teachers. That is, they will not be taught how to be "good parents", or how to be "a better person". Rather, they will be instructed in some basics of how to be a teacher, since that is the role they unknowingly act out in interacting with their children.

In conclusion, the role of a person's expectancies in shaping the results he gets must be clarified. Anyone familiar with Rosenthal's Pygmalion in the Classroom surely cannot underestimate this very subtle effect. It seems very likely that under-expectancy on the part of a parent or attendant leads to under-achievement on the part of the child. With retarded children, especially, it is too easy to rationalize lower goals, while those very goals may not be drawing the full potential from the child.

Demonstration

To demonstrate the techniques involved in child management, five mothers of handicapped children (who ranged in age from five to sixteen years) held a group meeting to discuss their current problems and to supply feedback on techniques previously employed with their children.

The meeting was arranged before the group of workshop participants so that they could witness the desired effects of parental involvement.

During this session, the trainers (personnel engaged professionally in child management) briefly traced each parent's problem, and outlined the recommendations offered by the team to eliminate undesired behavior. All parents had experienced at least one problem with their individual children at meal times. These difficulties covered all areas from not sitting still at the table to throwing food all over the room. The trainer suggested possible management techniques. These were supplemented by suggestions from the parents themselves.

Principles of reinforcement, time-out, and punishment were discussed, and parents were reminded of the need for consistency and immediacy in implementing a behavioral program. Each parent reviewed the progress his child had made to date, and formulated a program to deal with a current management problem: i.e., one parent decided to use a time-out procedure whenever the child grabbed food from another family member's plate; another decided to use a favorite toy as a reinforcer whenever the child ate two spoonfuls of a vegetable.

At the conclusion of the session, the parents and trainers entertained questions, comments, and suggestions from the audience of workshop participants.

PROGRAMMING FOR THE BLIND, DEAF, AND MULTIPLY-HANDICAPPED RETARDED CHILD

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With the advent of the Right to Education Suit in the Commonwealth of Pennsylvania there will be an influx of the multiply-handicapped children coming into public school classes. To be able to teach these children effectively, one must first accept the disability and come to understand it, and, thus, all of its ramifications upon the learning process and upon emotional and social development.

Some of the individuals who will enter existing classes for the educable and trainable retardates may well be in the group classified as visually handicapped, while many of the legally blind probably will continue to be placed in the schools for the blind or in special classes which focus on the needs of their vision problem rather than on their retardation. In the newly-forming classes for the lower-functioning retarded children one may find some totally (legally) blind students. Also, possibly some deaf-blind classes will be opened.

A. The Blind Retarded Child

There is probably a very small percentage of the visually-limited population which is totally blind: i.e., have no light or form perception present. The greater percentage of the population will have light perception at least, and possibly form perception or light projection to a degree that enables them to distinguish hand movements in front of their eyes. Persons having this light projection, or perception, are said to have travel vision, but because the acuity is 20/200 they are classified as being legally blind. With the perception or projection present, a level is afforded upon which to initiate programming. The important point is to start by utilizing the residual vision and work from there.

Another point that needs to be discussed is the belief that if a person loses one sense, others become stronger and "take over". In most cases this is not true. It seems that persons with a sensory loss use their other senses to the optimum, whereas the remainder of the population does not use its senses to optimal advantage.

In a study by Hayes, a sample of blind and sighted subjects was tested on the following skills: (1) direction of sound, (2) distance of sound, (3) intensity of sound, (4) acuteness of smell, taste, and touch, (5) discrimination of lifted weights, (6) passive and actual pressure, (7) sensation to changes in temperature, and (8) acuteness in the vibratory sense. The results of the study showed that the blind did not surpass the sighted, and, in many instances, were inferior in certain skills (Cruickshank, 1963, p. 238).

What, then, are the most important skills that visually limited students need? According to Cruickshank (1963, pp 233-235), the blind have to improve their auditory, olfactory, and tactile perceptions, as well as

their recognition of the spatial qualities of objects.

To handle the child who has retardation as well as the disability of blindness, one should consider the merging of the two programs. The subjects which the retarded child will cover, and the methods which will be used, will have to be adjusted to remove the emphasis on vision that exists in our school program.

Another concept that needs to be taught the blind, and which may help the retarded as well, is that of mobility and orientation to his environment. The fact that the environment is not static, and that things are always changing must be learned. This is a skill which needs to be taught from the first day of the child's life. Objects do move, and the blind child needs to learn this and to develop the searching behavior of the sighted child. With retardation added to the visual problem, one of the characteristics of the retarded may be present: i.e., dislike for changes in routine or environment. For this reason, stress must be placed on the fact that environments do change. Another aspect of instruction is the need to start working with the blind as well as the retarded at an early age. With the combination of disabilities, it is all the more important to begin the first day that it is apparent that there is a disability. With home-bound instruction, one can ensure that the blind child will receive the stimuli that the normal infant receives unknowingly, and that he will also be given the additional attention or programming he requires.

What assessments are available which can be used to provide a useful evaluation of a blind child's abilities or appraisal of abilities and weaknesses? One test that has been developed to test the intelligence of the visually handicapped is the 1930 Hayes-Binet Scale. In 1941 this scale was used with a group of residential students. The mean IQ for the group of 2,372 was 98.8; the range was 92 to 108.1, and the standard deviations ranged from 15.24 to 22.62. These data indicate that this scale can be used with the visually limited as a comparison to the intelligence tests given to the sighted. The retarded visually limited child should score a bit lower than his sighted companion since the test was adapted from a scale for the sighted. (Cruickshank, 1963, p. 240) Because the Hayes-Binet Scale has not proved to be entirely satisfactory with younger and older students, it is suggested that the language portions of Wechsler or Binet scales be used as well as any other portions which do not require sight to perform. Since the Kohs Blocks have smooth and rough sides rather than colored sides, they may be substituted for the red and white blocks used in the performance subtests of the Wechsler or Binet. (Cruickshank, 1963, p. 242)

Because the Hayes-Binet, the Wechsler, and other tests have not proved to be accurate measures of the performance of blind children who were under three years, the Maxfield-Fjeld Scale was created. This is a performance rating scale of social maturity, not an intelligence scale. The 95 items were divided into age levels which have been taken from the Vineland Scale, and were designed especially for use with the under-three-year-old visually handicapped child. The scale was the result of a study by Maxfield and Fjeld, in which the Vineland was administered to 101 visually handicapped children aged nine months to 6.10 years. The mean social quotient was 83.54, the standard deviation was 29.38 (Cruickshank, 1963, p. 287).

Size of the standard deviation was attributed to the fact that the test was given to a group of children who varied widely in ability: i.e., visually impaired who ranged from severe to mild retardation to normal; 77 items were selected from the Vineland. Data indicate that the blind had difficulty with 14 items: e.g., eating with a spoon, buttoning, marking with a pencil, fetching and carrying, naming familiar objects, and cutting with scissors. The blind excelled in 15 areas: e.g., sitting unsupported, discriminating foods, washing hands, and playing with other children (Cruickshank, 1963, p. 287). The Maxfield-Fjeld Scale evolved from this initial work, and in 1957 the Maxfield-Buchholz Scale, "A Social Maturity Scale for Blind Preschool Children", was developed.

A question that is often asked is, "Does the blind infant develop at the same rate as the sighted, or are there differences which may lead to retardation?" Gesell, Ilg, and Bullis studied the development of a group of congenitally blind infants, aged birth to four years. They found that the blind infant develops at the same rate as the sighted infant in the areas of sitting up, manipulation, locomotion, exploratory behavior, and language and social behavior, thus confirming that maturation, not the presence or absence of vision, is the issue. The blind infants did show some retardation in areas of eye-hand coordination, and the investigators found that the blind child's head remained in the constant mid-position (Cruickshank, 1963, p. 285). This may be an innate action in that it is an attempt to maintain an orientation to sensations around him. Since the blind child is so dependent on his hearing for orientation, he is hesitant to move his head.

B. The Deaf Retarded Child

Hearing is tested by using a pure tone or speech audiometer. With a loss of ten decibels, the person might be considered hard-of-hearing because there will be some tones or sounds that he cannot hear. This will have only a mild effect on speech, and prove of little difficulty in learning if a hearing aid can be used. With a loss of 50-60 decibels, there will be increased trouble in hearing sounds, and there is apt to be more difficulty with speech and more trouble with communication in a group. With a loss of 80 to 110 decibels, there will be little useful sound, and the person will be considered deaf. These are the functional definitions adopted by the various hearing associations. However, at times the terms "hard-of-hearing" and "deaf" are used to denote the presence of speech and/or speech reading skills. A person with a loss between approximately 45 to 90 decibels, who has speech and speech reading skills, is defined as "hard-of-hearing", not "deaf".

How should the deaf or hard-of-hearing child be handled in class? The child must be talked to constantly. The golden rule in deaf education is talk, talk, talk....The child has to learn that speech and communication come from the face. The child should be encouraged to talk if he can, and he must try to hear all that he can. Most children wear hearing aids if there is any possibility that some sound will get through. The more the child hears, the more there is to imitate, and, thus, the greater likelihood of speech. As the teacher talks to the child he must see the teacher's face if he is to learn to lip-read. If there is the chance that the child might lose the marginal speech or hearing that he has, or if the disability

is so severe that the child will eventually be placed in a day or residential program for the deaf, effort should be made to train the child in speech reading, signing, and above all, in cueing of total communication. The child should have skills in total communication in order to reveive some of the inputs that the hearing child receives.

C. The Deaf/Blind, or Multiply-Handicapped, Child

The deaf/blind child is possibly the most difficult of all groups to be provided an education program. With two of the input channels turned off, the deaf/blind child is very restricted in the ways in which he can be taught.

Nevertheless, the problem of identifying and programming for these children remains. What can be done, now that educational programs are mandatory for these children? First there is need for an efficient system of early detection and a plan for the provision of services. The Model Report Area for Blindness Statistics at the National Institute of Neurological Diseases and Blindness is reported to be the registry for all blind multiply-handicapped children, as well as a system to provide services from birth to death (Graham, 1967, p. 19). There is acknowledged need for such a plan, and it promises to be especially beneficial for premature infants - i.e., children who are viable and have weights less than 2500 grams or 5.5 lbs.

Since the placement of pupils in public classrooms is increasing, what can be done to help prepare the teachers? Wolf, in his study, asked teachers how they assessed their own training, their weaknesses, and also what training was needed in order for them to cope more satisfactorily with these children. He states that 50% of the teachers felt that they were ill-prepared, while 82% wanted more training in child development, the blind, and mental retardation. Wolf also stated that he felt that the teacher of the blind/mentally retarded should have a Master's Degree and ten years of experience in teaching the sighted and the blind before beginning to teach the blind retarded (Wolf, 1967, p. 20).

One thing that concerns teachers when they are asked to teach the multiply-handicapped is the fact that the class size frequently is the same as that for normals, although the students require much individual attention. The Oregon State School for the Blind Program and their Rating Scale for determining the teaching load is a system that might well be applied to other disciplines (Graham, 1967, p. 20). Basically, the system involved the assigning of points to disabilities. All of the points are added together to determine the load for the teacher. The teacher is presumed to be able to handle a load of 60 points. If six points are then assigned to blindness, the teacher should be able to handle a class of ten blind children. However, if the children were congenitally blind, the points given are six, plus two for "from birth", so the teacher would only be able to handle a class of 7.5 children.

A thorough evaluation of the multiply-handicapped child requires use of all available sources. The Haeussermann Scale is invaluable; it has been specifically formulated for the child with a disability. Because this test can be adapted to suit the individual problem of the child, a more accurate rating results. Items from this test lend themselves extremely well to sequential program development, and constitute an excellent operational base.

Programming for the multiply-handicapped child is based on the same developmental sequences as the program for any other child. Once assessment has been completed, a skill baseline is established in each area. Subsequent activities aim to help a child integrate present skills in order to move on to the next skill level. In cases where there are sensory impairments, the teaching environment, as well as materials and methods, should be selected so as to capitalize on the least impaired sense, while providing opportunities for the child to learn to use whatever residual hearing, vision, or motoric control remains. In most cases a reality-based, multi-sensory oriented program provides the optimum environment. The child should be encouraged to explore his surroundings, with the instructor giving feedback to the child via the appropriate sensory modality. As with any other child, focus must be on those skills which will enable the child to adapt to and function in his society more successfully.

The use of vari-textured objects, amplification devices, sharp contrasts, and adapted communication media (large print, braille, signing) should be encouraged. In addition, the child should be given a variety of experiences with provision for as much independence as is possible for the particular child. Basic social and personal skills should be presented in appropriate, use-related activities. A parental counseling and/or training program is a vital part of the total curriculum.

Demonstration

Following the presentation, a demonstration was held to assess sensory strengths of two multiply-handicapped children. Using various toys and household articles, lights were flashed, bells were rung, and skin areas stimulated in an attempt to arouse a reaction from each child. One child, who was blind, deaf, and cerebral-palsied, was found to react only to stimulation of the skin. The other child, who also was deaf and retarded, was found to have some light perception. Appropriate activities were demonstrated with each child in an attempt to obtain interaction with the environment. These activities included light movement from a flashlight, noise stimulation, and simple imitative activities. Stress was placed on talking directly to each child in clear, concise terms, and turning the child's face toward the speaker, when necessary.

SECTION IV

THE ROLE OF SUPPORTIVE PERSONNEL IN PROGRAMMING FOR THE LOW-FUNCTIONING CHILD

The level of functioning exhibited by the child being discussed in the workshop is influenced not only by the degree of retardation, but by the accompanying emotional and physical problems. An effective program, therefore, needs to include the input and expertise of such specialists as the physical and occupational therapist in addition to the medical personnel. While a child may be scheduled for individual treatment sessions with these experts, many aspects of the treatment plan can be included in the daily classroom program. Consequently, the trainees were afforded an opportunity, via lecture and demonstration, to gain insights into the role and classroom-related functions of the remedial specialist.

ROLE OF THE PHYSICAL THERAPIST

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The purpose of this discussion and demonstration is briefly to review and demonstrate the role of the physical therapist in a cross-modality approach to the remediation and management of the severely involved multiply-handicapped child. The advice this discussion provides will, for the most part, be practical in nature, with strong emphasis on the working relationship between the physical therapist, the teacher, and the parents. Discussion will center on how the physical therapist should function as a team member, what his responsibilities are, how recommendations can be carried over into the classroom and home, and, finally, there will be a demonstration of some of the techniques which have proved helpful in remediating physical handicaps.

It's probably an understatement to say that teachers are aware that the children whom they will be teaching and training will have a variety of significant deficits in voluntary motor ability, mental capacity, perceptual acuity, and communicative skills. However, for each of the above it must be remembered that each child will be involved to a varying degree. It is also essential to keep in mind that these areas of possible deficit are not mutually exclusive; that is, the integrity of each is interdependent upon the integrity of the others. A relevant and practical illustration of this point is the fact that a cerebral palsy child's ability to hold his head upright and fix his gaze on a blackboard or book often is dependent upon his sitting posture. Positioning is all-important in inhibiting primitive reflexes and in facilitating voluntary head and trunk control. Certainly the physical therapist can lend little to the actual process of getting the child to retain the information from the book; this is the teacher's responsibility; but the physical therapist can aid in evaluating the child's motor, sensory, and perceptual deficits, and in planning and implementing a program which will contribute to all remediation programs instituted for the child. In this case, the therapist can demonstrate proper positioning which will inhibit primitive reflexes and thereby facilitate learning. This example emphasizes

the point that not only are various sensory and perceptual motor systems interrelated, but to be truly effective the remediation approaches cannot, and must not, be allowed to remain isolated in individualized clinics or classrooms as, historically, has been the case. When teaching and training individuals suffering multiple handicaps, teachers and therapists, regardless of their abilities, are only deceiving themselves if they do not extend their programs and abilities from the confines of their own working environments. Professionals must be willing to share their expertise, and be willing to accept and to try suggestions from other specialists. They must also be willing to adapt and identify their programs and techniques to meet or compensate for the child's intellectual, emotional, neurologic, or communication deficits. This pooling of resources is a cross-modality approach. It means increased responsibility and accountability for professionals. It means reaching out of the classroom into the home for teachers, and out of the clinic into the classroom and home for therapists. It means breaking down of traditional roles, but most importantly it really means that members of the remediation team, parents included, will no longer be working in a vacuum, unaware of what his or her counterparts are doing. Now that we know, perhaps, how a physical therapist should work, attention may be turned to what he does.

Depending upon the availability of the physician, the physical therapist may or may not be the initial specialist to determine whether this service is indicated for particular students. However, as soon as it is determined that physical therapy is indicated, a physician should examine the child to determine if there are any medical considerations which may contraindicate certain activities. Examples of these considerations may include osteoporosis (brittle bones), severe convulsions, and congenital heart disease. Following a cursory evaluation to determine if the child would benefit from physical therapy, a more detailed evaluation should be instituted. This evaluation should include functional assessments of:

a. gross motor development
b. significant primitive reflexes
c. present or potential skeletal or muscular deformities
d. activities of daily living (dressing, feeding, toileting, etc.)
e. the need for assistive devices, including braces, wheelchairs, walkers, splints, and the possible need for surgery
f. sensory and perceptual deficits, such as tactile, vestibular, visual, proprioceptive. (This is dependent upon the physical therapist's training and experience.)

On the basis of the results of the phy ical therapist's evaluation, and after speaking with the other members of the evaluation team (occupational therapists, speech therapist, teacher, psychologist, and social worker) regarding the intent of their programs, he formulates a remediation program which can be implemented in the Physical Therapy Department and can be incorporated into the daily lesson plan in the classroom. Of equal, if not of more importance, the therapist must design a program which can be realistically carried out in the home by the parents or in the ward by the child-care staff. This entire area of treatment is a very sensitive issue, and must be handled with skill and empathy. One must remember that parents of handicapped children typically are beset with many more significant problems than the average parent. These may include overbearing financial burdens, marital discord, large numbers of

siblings, other retarded siblings, and the list is infinite. Despite the fact that the possibility of potential problems is high, the benefit to the child of the program's being carried over into the home outweighs the possible hazards. For effective habilitation, one or both of the parents must become equal members of the team. The deficits are, in general, of such magnitude that the six hours the students spend in a productive environment at school will not significantly alter the child's abilities if the other 18 hours, spent in the home, are conducive to abnormal function and deformity. "There are parents who, clearly from the kindest motives, resign themselves to the idea that their child is incapable of any normal development, and thus make it impossible for him to develop any potential ability he may have. Independence for the child must be the aim, but it is an objective that cannot be reached unless the parents support the treatment, and are ready to make full use at home of whatever abilities the child has learned during that treatment." (Finnie, 1970, p. 15)

In addition to evaluating and designing treatment programs for students with physical handicaps, a third major role of the physical therapist is that of an educator to professional and non-professional staff and parents. These people certainly have a right, as well as a need, to have a working knowledge of the neurological and orthopedic problems of their students and children. They should have an idea of the cause, the course, and possible directions the conditions might assume. The anxieties and unrealistic expectations, often developed as a result of operating in a vacuum, can contribute to the parents' and staff's frustrations in working with the multiply-handicapped child. If they are not aware that in many cases measureable progress may require six months to a year of vigorous daily work, it would only be natural for them to become frustrated after three months of no change. As a result of the acute shortage of therapists who are experienced in treating the multiply-handicapped child, the operative physical therapist must assume the responsibilities of a consultant. It is essential, then, that the therapist train staff and parents to treat children and to act as troubleshooters; in this way, the staff and parents become extensions of the therapist's abilities. The therapist must teach exercises, positioning, the application of braces and splints, the use of various pieces of therapy or play equipment, toileting and bathing techniques, and feeding procedures. Other more subtle problems which, on a practical basis, become tremendously significant are: "How do you lift a C.P. child without hurting him or ruining your own back?" "When is a brace too small?" "What resting postures are most conducive to normal development?" "What can we do to get Jimmy to use his right hand?" These typical questions are indicative of information which parents and teachers need to know. The physical therapist should be able to provide many of the answers.

A practical demonstration will be employed to illustrate what one does to improve normal motor development, inhibit primitive reflexes, prevent or correct deformity, improve self-help skills, and train children to ambulate. Four children presently enrolled in the Children's Developmental Training Programs of United Cerebral Palsy Association of Philadelphia and Vicinity, with the consent of their parents, will assist us. Their hanes are Tony, James, Debbie, and Tommy.

Demonstration

When working with children with neurological deficits, there are several important points that the therapist should emphasize:

1. The majority of children with these problems are not really sick children, and therefore do not need to be constantly protected from their physical environments. Children learn, as you know, by exploration, trial and error, repetition and experience. Overprotection inhibits learning, initiative, and development, granted the percentages for return to normalcy range from fair to poor; still, with little or no stimulation the percentage is zero.

2. Place some responsibility, although it may be limited, on the student. Examples include indicating toilet needs, assisting in dressing, crawling or moving one's own wheelchair from place to place, and even swallowing rather than having food poured down one's throat. Many times the staff is pressed for time, and as a result forsake long-range goals for the short-range goal of expediency. To be effective, we cannot allow this because it perpetuates dependence.

3. Attempt to position students with primitive reflexes in postures which reduce the effect of the reflex. This will facilitate voluntary movement, but also will reduce the possibility of deformity. The child should spend as little time on his back or stomach as possible. Chairs should be of a proper height, width, depth, and footrest length. There should be only one inch of exposed chair seat on each side of the child. His legs should be bent at the knees, and a platform used on which he can rest comfortably. The child's hips should be flush with the back of the chair at a few degrees above a 90° angle. A tray should be provided, inlaid with either different textures of carpet to introduce tactile learning, or, at later stages of development, with pictures and/or accompanying words to teach beginning reading skills.

4. Do not <u>force</u> the child to do anything physical in nature. This includes exercise, positioning, ambulations, etc. We should be gentle, but firm, in the things we teach. This comes with patience and experience. One must get the feel of muscle tonus, bone strength, and how hard to push the child's physical capabilities.

DEVELOPMENTAL NURSING

Gloria Gambler
Hamburg State School, Pennsylvania

In teaching the mentally retarded and/or the physically handicapped, more frequent individual instruction is preferred, especially with initial instruction.

In planning a program on a daily basis, seek to provide satisfaction for the basic needs; in this way, these needs can be kept from interfering with the learning process. According attention to the child's behavior reinforces the repetition of the behavior. Daily programming should include periods of time in which the child can explore and satisfy his curiosity. The physical area in which the child is expected to learn should be comfortably regulated in temperature and humidity. While the hyperactive child needs time for physical activities, rest periods and changes of position are especially important for the child in a wheelchair who sits in one spot all day long. In that position, often unable to make his needs known, boredom and failure may ensue. These and other aversive conditions cause frustration, and frustration leads to undesirable behaviors which may hinder learning. If these points are remembered in planning daily programs, many problems may be averted.

At Hamburg State School and Hospital, the Admissions Nurse has the responsibility of interviewing the family before the child's admission, and of learning from the parents the vital information necessary for the care of their child. A similar interview prior to the child's starting school would be most helpful. The kinds of food the child enjoys, how he eats, how he uses the toilet, phrases used to communicate, toys and activities the child enjoys, how he responds to various things, how he acts when he is ill, what inappropriate behaviors he exhibits, can all be discussed and make the child's and the teacher's adjustment to the new situation easier for both. Time is saved and frustration prevented when this information is supplied rather than discovered by trial and error; thus, establishment of rapport with the child is made less difficult.

Frequent discussion periods with the family can lead to consistency in training and teaching the child. What is being done in school or at home can be undone by one or the other when the techniques being used differ and thus confuse the child. Most parents are more than willing to help if they fully understand what is expected. Classroom visits by the family, and home visits by the teacher or school nurse can facilitate understanding of mutual problems, observation often being more fruitful than explanation.

When working with these children, it must be kept in mind that their frustration tolerance may be low. Because a great many of them have been

required to do little for themselves or others, they have had little experience in learning how to meet demands placed upon them. Signs of strain are negative behavior: e.g., whining, running away. When these occur, it may be that the child is being asked to do too much too soon. Stopping, going back, or making teaching tasks simpler are all methods to which the child usually responds favorably. When he seems at ease, movement may start toward a more complex task.

The way in which the child is spoken to is also important. Simple words, coupled with gestures, are most effective in communicating with the child; voice tone should be pleasant and free of impatience. So, too, should be the manner in which the children are approached. Annoyance or anger with their slowness should not be shown. Even more important, tasks which they can do for themselves should not be done for them merely because they take a comparatively long time to act. Many times it is the teacher who cannot tolerate their inability to succeed after numerous trials, and so intervention occurs. These children should have the satisfying opportunity of working hard and successfully at something. There is nothing more motivating, particularly if the child himself has a great deal of perseverance.

Probably a great many of the children who will be seen are going to be deficient in daily living independence. Teaching them total, or at least partial, independence in this area can be the key to their rehabilitation: the individual child's self-esteem is fostered, he is made more acceptable to society and less difficult for the family to manage, and the teacher gains greater satisfaction from his work.

A major aspect of nursing care is the teaching of self-help skills. Teaching the child to feed himself affords an excellent example. It is known that a child is ready to feed himself if he is able to grasp objects and put them in his mouth with fair control; additionally, he must be able to balance himself when in a sitting position and possess the ability to remove food from the spoon with his lips. To begin, the child is seated at a table where his feet can touch the floor. The height of the table should be just above his waist.

In instances where the child must remain in a wheelchair, his feet should be comfortably positioned on the foot pedals. He should be sitting up straight, and the table should again be at the same height, or a lap-board should be securely fastened to the chair at approximately this level. If not previously established, it must then be determined if the child is right-or left-handed. If such determination is necessary, a small amount of food or his favorite toy may be placed directly in front of him and notice taken of the hand with which he reaches for it.

Following this, the child is helped in grasping the spoon. He is physically moved through the activity of feeding himself, while words of encouragement and praise are used during the entire meal. If it is felt that the child is actively participating in any part of the activity, assistance should be lessened, and the child should be allowed or encouraged to do it independently.

Teaching is begun with the easiest part of feeding, that of bringing the filled spoon nearly to the mouth. At first the spoon is filled for the child, and his hand guided almost to his mouth. Here the assistance is discontinued, and the child completes the last part of the task, which is placing the food in his mouth. As the child learns this step, the nurse's hand is released from his at increasingly greater distances from his mouth. He is now required to move the spoon a greater distance to his mouth. At last he need only learn to fill his spoon. Supporting the child's elbow and moving it away from his body facilitates his learning to dip the spoon in the food.

Some authorities suggest that the child first be allowed to finger-feed. It has been found in most cases, however, that it is more difficult to get the child to feed himself with a spoon if he has first been urged to finger-feed. The child is encouraged to keep the opposite hand in his lap. This removes the temptation for him to put his hands into the food, and helps him to eat neatly. If the child consistently puts his hand into the food, or drops the spoon to finger-feed when he can eat with a spoon, say "no" firmly, and remove the tray for several seconds. However, just because a child is an untidy eater, he should not be denied the opportunity to feed himself. Also, he should be taught to wipe his hands and chin with a napkin.

If the child can already feed himself with a spoon, he perhaps can advance to using a fork. He may be taught how to spread his own bread, and how to cut his own meat by interchanging his knife and fork. Serving his own plate, and being allowed to pour from a pitcher can also be learned by the severely retarded who do not suffer physical handicaps.

Learning to drink from a cup may need to be taught. Two hands should be placed around the cup, and only a swallow or two of liquid should be poured into the cup until the child learns to manage the cup without difficulty. The cup should be placed behind the teeth on top of the tongue. Hold the lips around the cup if necessary. If the child begins to choke, bend his head forward and raise his arms.

Those who do not demonstrate a readiness to feed themselves may have to be fed. They may not yet have developed to this point, or may be physically impaired in some way. In these instances, the child should be comfortably placed in an upright or semi-upright position. If the child is not too heavy, the nurse may best manage this by holding him in her lap. Some children push the food out of their mouths with a tongue-thrust instead of swallowing it. To prevent this, the child should be fed from the side instead of from the front of the mouth, the spoon being placed on the middle of the tongue with a slight downward pressure. Food which spills on the child's chin should be scraped off with the spoon in an upward motion from the chin to the mouth. This helps to teach the child how to close his lips.

The child should be fed in a manner which fosters trust and security. He should be clean and dry so that the feeding experience becomes associated with sensations of comfort, pleasure, and satisfaction, thereby establishing a fundamental basis for the child's adjustment to his total environment. The appropriate motivation and abilities to achieve self-feeding will stem from these satisfactions. Many children in this category do not know how to chew, and must be served soft diets. Chewing can sometimes be taught by starting

with soft bread, cookies, or cake. These foods can be tried prior to the regular meal. The child will be hungry at this time, and will accept the new food more readily. The jaws should be moved in a chewing motion.

The mealtime atmosphere should be relaxed and quiet. Any handling of the child during mealtime should be done firmly, slowly, and gently.

Food should be served in small amounts, chopped or cut in small pieces. Children like plain foods, and often eat one food at a time. Forcing the child to eat may create emotional problems, and should be avoided.

Learning body cleanliness is another important self-help skill which may have to be taught. Proper hand and face washing can be practiced several times during the day. It should occur after using the toilet, before snacks and meals, and after snacks and meals. Benches may need to be provided for smaller boys and girls so that they are in a better position to reach the lavatory. Those in wheelchairs should be taught how to maneuver their chairs to the lavatory. They should then be taught to lock their chairs, and perhaps may need to learn to grasp the lavatory to pull themselves forward in the chair so they can perform the task more easily. Soap and towels should be easily accessible to make the child less dependent upon your presence. In order to prevent the child from burning his hands, he should be taught how to regulate water temperature. His hands should not be in the lavatory when the water is turned on. Teach him to turn on the cold water first. Then have him place his other hand under the tap and very slowly turn the hot water faucet until the water is comfortably warm. Making a game of lathering the hands and face with soap may help to initiate the child's participation in the routine. In order for the child to learn this activity he may need, as with feeding, to be physically moved through the activity until he begins to take part actively, with assistance being gradually diminished. Many times the child can best learn by imitation. Perhaps the demonstration of the entire procedure, or one step of the procedure, with the child required to repeat it, will be most helpful in teaching this skill. Constant words of praise and encouragement should be used each time the child manages to perform a part of the task with any amount of success.

Teaching these children use of a toothbrush and of a comb can be done after snacks and meals when they are already at the lavatory for handwashing. These tasks are a little more difficult, and total independence or an impeccable performance in this area may not be possible for a great majority. Despite this, however, the child's participation in and awareness of these activities are significant. A mirror of proper height should be available. Rinsing the mouth with plain water, perhaps with food coloring added to make it more appealing, before and after brushing, helps rid the mouth of food particles. The brushing should follow the same routine each time it is done. Brushing the outside surface on the right, left, and front, first on top, then on the bottom, then the biting surface of the same areas, followed by the inside surface of the same areas, may be a good method to follow. Frequent rinsing of the brush is encouraged. Use of plain water is most practical in brushing. Some children have difficulty managing toothpaste in their mouths, and thoroughly rinsing the paste off their teeth and brush may be difficult for them to accomplish.

Again, in teaching combing, the same repetitious routine in front of the mirror should be followed. Combing the one side, then the back, to the other side and front may be taught. The child should be taught to grasp the comb firmly, and start at the top and stroke downward. After he has completed these tasks, emphatic praise over the child's appearance will help in stimulating his interest in himself.

Undressing is simpler than dressing, and usually is learned first. The child who can undress himself at will can also learn to dress himself. Even those with some physical handicaps can at least be taught to dress themselves partially.

Interest and participation in dressing can first be initiated by getting the child to raise his arms when putting on or taking off his shirt. He should be encouraged to take off his sock after it has been removed to the instep of his foot.

Dressing is a rather complex behavior, and must be taught by small steps. If self-dressing is to be taught, initially clothes without buttons, hooks, snaps, or zippers should be used. Dressing is made easier if clothes are loose-fitting, and can be put on easily. To begin, the last step of the final behavior is first. As each step is learned, the child continues to move backward through the skill so that he can be praised or rewarded for completing the final behavior independently. The same routine, and the same simple commands, are used as each step is learned. As soon as possible the guidance is removed so that it is the child himself who performs the skill. The amount of assistance and the degree to which dressing must be broken into simple steps is determined once again by the individual child's present level of functioning.

In putting on a shirt, the child first should be taught to pull the shirt down with both hands from the chest area. The next step would be to have the child's hand partially out of the sleeve as he pulls his shirt down. Once these movements are performed adequately, the hand can be completely out from the sleeve. The same method is followed in teaching the child to put his arm and hand through the other sleeve. The next step would be to teach the child to pull his shirt down from a point over his head. After the nurse holds the shirt above his head, he should be able to pull it partly over his head, put one arm, then the other arm, through the sleeves, and then pull it down to his waist. The final steps - moving backward through the behavior - are teaching him to pull the shirt over his head, finding the opening at the bottom of the shirt, and laying the shirt out in front of him with the label in the back of the shirt face down.

Putting on other articles of clothing are taught in the same manner. The steps in putting on pants would be pulling the pants up from the hip area, then from the thigh area, from the knees, and then from the ankles. Next, one leg would be partially removed from the pants, then completely removed; then the other partially, followed by completely, removed; and finally the pants would be laid out with the opening face up. Once the child masters these skills he can begin to be taught how to button, snap, lace, and tie. These require finer coordination and motor control. Oversized articles securely fastened in front of him eliminate some problems in teaching these skills. Rings which he can easily grab can be fastened to zippers to make closing easier.

Two different colored laces, knotted together, might make lacing easier for the child. The laces should be removed from the top eyelet on both sides, and the child shown how to lace these correctly. After he has learned this, the lace is removed from the next eyelet, and so on. He should be taught to have an equal amount of lace on both sides by putting the ends of the lace between his thumb and forefinger and pulling straight up and away from the shoe.

A simpler method of tying shoes is initially to use longer shoe laces than necessary. Two ties should be made, one on top of the other, with some space between the two ties to form short loops. The loops are then held and pulled tight. Lacing and tying are probably the most difficult skills to learn, and should not be taught until other self-dressing skills have been learned well.

No doubt many of the children in classes will not be toilet-trained. The child is usually not ready to be trained until he gives some sign or shows discomfort when he is wet or soiled. The child should be able to sit on the toilet for short periods of time. Physically handicapped children may need special potty chairs or hand rails to make this activity safer and more comfortable for them. There should be a rest for the arms and feet. If the child is to be toilet-trained, he should first be observed for several days to determine at what time he is most likely to void or defecate. Once these times are noted, the child should then be placed on the toilet, for it is more likely that successful use of the toilet will then occur. By gesture and tone of voice it should be indicated to him that he is expected to pass his eliminations in this place and at this time. A specific word that is understood by everyone should be selected and used. Perhaps the child may need to be placed on the commode every two hours, or even more frequently, at first. He should remain on the toilet for no more than 15 minutes at a time. The experience should be a pleasant one, and praise or tidbits of food for each successful trial will speed training. When accidents occur, the child should not be scolded, and should be changed immediately in a matter-of-fact way. By changing the child immediately, he becomes accustomed to the comfortable feeling of being dry. Any sign the child uses to indicate he needs to use the bathroom should be praised, and should be heeded. As the child learns to sit on the toilet, the distance between the child and nurse should gradually be increased. He should be encouraged to do as much for himself as possible. How to manage his clothes at the commode, how to use the toilet tissue, and how to flush the toilet all need to be taught. Again, it may be necessary to guide their hands through these acts.

Perhaps before any of the aforementioned skills can be learned, the child may need to develop finer motor skills. In order to help the child develop in this area, his environment must be filled with an abundance of desirable elements, and he must be provided with opportunities to acquire these abilities. It must be remembered that the retarded and handicapped child needs more environmental stimulation than the average child. The average child can help to provide his own stimulation. Things that move, make noise, are brightly colored, and have different textures, size, and form can be used to get the child's attention, and may rouse his desire to handle and manipulate the object. The non-ambulatory child especially needs to be placed on the floor or a mat. This gives him more freedom, and he can then

roll over and crawl or move about and develop muscle strength and coordination. Mirrors placed around the room help the child compare his body movements with the movements of those around him. Teaching him facial features and the names of different parts of his body increases his total self-awareness.

Severely and profoundly retarded children must be taught how to play and how to interact with one another socially. Teaching the child self-reinforcing play activities will motivate him and help him to achieve greater happiness and enjoyment. In addition, these play activities can be used to improve motor abilities. Again, the child must start at his own level of functioning. Perhaps he may have to be physically guided through an activity: e.g., ringing a bell or shaking a rattle. Soon he will become stimulated by the noise, and will begin to ring the bell or shake the rattle to hear the noise. The activity in itself has become reinforcing. Building with blocks, and then knocking them down is another simple activity that can be taught to children in this category. Social interaction can be encouraged by teaching one child to roll a ball to another, or to pull one another in a wagon. A bean-bag toss game can be used to develop strength, coordination, social interaction, and social maturity. First, the child can be taught to throw the bean-bags into a box or basin when standing directly in front of it. Gradually, the distance between the child and the receptacle is increased. When he has gained control of this skill, another child, who also has developed the ability to throw the bean-bag in the basin at approximately the same distance, may be introduced. Each child can be given bean-bags and a basin with which to play. Through this parallel play both children learn to accept the presence of another child in their play. Once this acceptance has been made by both children, one basin and one set of bean-bags can be removed. One child can be seated with the other child and take his turn at throwing the bean-bags. The seated child should be encouraged to applaud and show interest in the other child's ability to throw the bean-bag in the basin. Then the children can switch places.

By using games such as this, the child's level of frustration and stress tolerance has been increased. He has been taught a way to spend his leisure time, to get along with his peers, to be a good participant and a good audience. Hopefully, some competitive spirit also was developed which helps the child's motivation.

Perhaps one of the most frustrating and common handicaps these children have is their inability to communicate adequately, particularly through verbalization. Some may lack the necessary physical faculties; in these instances, learning speech may be almost impossible. Various exercises may first be necessary to strengthen weak body parts required for speech. Blowing assists muscles involved in speech, so making games of blowing out candles or blowing cotton across a table can be fun as well as beneficial. Tongue control can be developed by placing peanut butter on the roof of the mouth and requiring the child to push it off with the tip of his tongue. Drinking through a straw can discourage drooling, and help the child in swallowing properly.

Every sound or attempt at vocalization by the child with delayed speech should bring a pleasing response from the nurse. Encouraging language development can occur throughout the entire day. Each activity or object with which

the nurse and the child are engaged should be named and discussed. Using the same words daily aids the child in associating the word with the object or the activity. Speaking slowly and clearly aids the child since speech is learned mainly through imitation. The child should be spoken to even though he does not respond verbally or seem to understand. Attempts should be made to elicit language responses by having the child indicate his needs and wants in any form. Perhaps at mealtime he could be required to point or, if possible, verbally ask for his milk. Simple words like "hello", "please", and "thank you" promote his acceptance by society. Ask him questions which require simple answers. Give the child an opportunity to talk, and listen carefully to him, make him feel that there is an interest in what he is saying, and he will thus gain greater confidence in expressing himself.

The topics which have been discussed are a part of the nursing care required by these individuals. Desire to promote optimum development of the child's potential is the common denominator.

Demonstration

Slides were shown to emphasize points made in the discussion. In some instances slides were of children at Hamburg State Hospital who slowly are striving for fragments of independence; in other instances, almost total independence in activities of daily living was exhibited.

The following list of references provides information on handling children with seizures:

Epilepsy Foundation of America - Pennsylvania Department of Health, P. O. Box 90, Harrisburg, Pennsylvania.

Handbook for Parents - Ayers Laboratories, New York, N. Y. 10017

Modern Concepts of Epilepsy - Associated Films, 224 Delaware Ave., Oakmont, Pennsylvania - 15139
16 mm color-sound film

ROLE DEFINITION AND FUNCTION

Floyd E. McDowell
Human Resources Development

(Since the workshop participants were to function as in-service training personnel upon return to their sponsoring organizations, it was believed that attention should be focused on the definition of a trainer's role. Role-playing was used to emphasize the points contained in the McDowell presentation.)

Whether functioning as a teacher and/or a trainer of teachers and other personnel, the educator who works with lower-level-functioning mentally retarded students will probably assume many of the roles identified during a symposium on manpower utilization for mental health (SREB, 1969). These functional roles are as follows:

1. Outreach (human link) worker: reaches out to detect people with problems, to refer them to appropriate services, and to follow up to make sure these people continue to their maximum development or rehabilitation.

2. Broker: helps people get to the existing services, and helps the services relate more easily to them.

3. Advocate: lists and pleads for services, policies, rules, regulations, and laws for clients.

4. Evaluator: assesses client or community needs and problems, whether educational, medical, psychiatric, social, vocational, etc. This includes formulating plans and explaining them to all concerned.

5. Teacher-Educator: performs a range of instructional activities from simple coaching to teaching highly technical content directed to individuals and groups.

6. Behavior Changer: carries out a range of activities planned primarily to change behavior, ranging from coaching and counseling to behavior modification.

7. Mobilizer: helps to get new resources for clients or communities.

8. Consultant: works with parents, staff, other professions and agencies regarding their handling of problems, needs, and programs.

9. Community Planner: works with community committees, boards, etc., to assure that community developments and resources are utilized to their maximum potential.

10. Care Giver: provides services for persons who need some type of on-going support (i.e., social support, day-care, 24-hour call, etc.)

11. Data Manager: performs all aspects of data handling, gathering, tabulating, analyzing, synthesizing, program evaluation, and planning.

12. Administrator: carries out activities that are primarily agency- or institution-oriented rather than client- or community-centered (i.e., budgeting, purchasing, personnel activities).

Some important research which has implications for role definition and function for teachers and trainers of teachers is reported in a publication entitled Florida Studies in the Helping Professions. This publication which is available from the University of Florida Press, Gainesville, Florida, discusses twelve years of research on the effectiveness of practitioners in the helping professions. College and public school teachers are included in the group which was studied. Arthur Combs analyzed this research to determine characteristics of good and poor practitioners in the helping professions. He lists nine propositions for developing a meaningful, positive, and effective role as a helper in human services. These recommendations should be given consideration, hopefully to add strength to the role definition and function of teacher or trainer of other personnel who work with the lower-level-functioning mentally retarded and their families.

The first proposition developed by Coombs centers on the person's use of himself as an instrument to carry out his own and society's purpose. The good helpers are always in a process of becoming - a freely operating, exploring, questing, thinking, continuously developing person. One way of expressing this would be for a person to be in a learning process of cyclic interaction along a relevant continuum with maximum divergent productivity as opposed to a rigid, static role.

The second proposition concerns helping a person become by accepting him as he is when he arrives. We may not agree with what the individual brings to us, but we must accept him as a worthy person if we are to help establish the security needed for learning.

The third proposition concerns logical and growth approaches to learning. We have emphasized the logical approach in teaching. We set up objectives, analyze and determine the variables, and then manipulate the variables to accomplish our objectives. This is a teacher-centered approach which superimposes a pre-determined package on the student or learner. The research shows that effective helpers use a "get with it" problem-solving approach to learning. Both trainer and trainee confront a problem and work toward solutions. The method is effective in determining just what the problems are in exploring, questioning, and examining, instead of lecturing, telling, and coercing.

A fourth proposition, or principle, is to emphasize meanings rather than facts in the training processes. In order to produce an important change in a person's behavior, one must concentrate on his meanings and on changing those meanings. Here consideration is given to the causes of behavior, rather than to the symptoms. One of the more important findings from the 12-year research project was the importance of one's system of beliefs, beliefs which determine the type and quality of instantaneous response in a human interaction situation. Learning experiences which will help individuals explore their meanings and discover new meanings need to be offered.

A fifth proposition concerns self-concept or how a person sees himself. The implications are for teachers or helpers to help persons feel wanted and accepted. Each person needs success experiences to develop feelings of confidence and competency. How a person behaves is a function of how he perceives himself in relation to others. The main contribution to the individual's self-concept is the feedback from others. Teachers or helpers are significant persons who can directly and indirectly help learners develop more positive attitudes and feelings toward themselves.

The sixth proposition is to help learners create a need to know before we give them information. Maximum emphasis should be on practicum experiences where problems can be discovered and needs identified. Only then can information be properly interwoven into a meaningful learning experience.

The seventh proposition concerns methods or techniques. From the research, Combs found that the crucial criterion is the authenticity of the method for the person who is using it. In other words, we should find ways to help a person explore and discover the methods which are good and useful for him, rather than superimpose methods we have decided should be used. All relevant methods and techniques should be in the teacher's or helper's repertoire, but he should decide which method or methods to utilize.

An eighth proposition concerns the importance of sensitivity. Good helpers have the capacity to understand how things look from the point of view of the recipients. The development of an empathetic approach should be a prime objective of any training program. Here emphasis is on a subjective rather than an objective approach to most learning. There should be more emphasis on understanding children and less on emphasizing learning about children.

The last proposition distinguishes between the roles of practitioner and scholar in producing effective teachers or helpers. The training of scholars is highly academic; the training of practitioners must be personal and experiential. Effective training of teachers or helpers in human services requires that the practitioner get involved in his subject matter. The scholar is content to learn about and question and be able to give information to others. The practitioner not only has to know, but he must do something with the knowledge.

One very effective technique for training in role definition and role function is role-playing. Role-playing leads to forced empathy. It has been said that if one is really to learn anything, learning should start at the emotional center and proceed from the inside out The major objective in role-playing is to place a person in a situation with one or more other persons, and let them react as if they were in a real-life situation. By experiencing these relationships in reality-practice they can become living principles. The main purpose of role-playing is to train for action, and role-playing is effective for reducing the following barriers to action: perception, or the way we view situations and people; attitudes, or the predispositions for certain perceptions which we bring to a situation; the presence of frustration, which prevents a person from solving problems and, instead, makes him react in hostile and non-constructive ways; the fear of change, which arises because of insecurity; the lack of confidence in one's ability to use new methods; and the interference of old habits of action. The main uses of role-playing are: training in leadership and human relations skills; training in sensitivity to people and situations; the stimulation of discussion; and training in more effective group problem solving.

One suggested technique for initiating role-play situations is to use role-play briefing sheets. Each briefing sheet should contain the following classes of information: who, what, where, when, and whither (goal or objective); name and status of each person depicted in the roles; information on the nature of the interaction is given to all persons, although content of the briefing sheet differs for each person. The objective or goal is usually given to the person playing the role of trainer; and the last sentence of the briefing sheet is written so that interaction between role-players is facilitated. Another suggestion for improving role-play training is to have participants reverse roles.

The following briefing sheets which focus on some of the problems encountered in implementing a comprehensive in-service program (such as the one each trainee participating in this workshop is expected to devise) were used as a basis for demonstration and discussion of role playing.

Role Play Situation No. 1

You are (Mr. John, Ms. Joan) Smith. You are supervisor of a program for exceptional children which includes a new program of education and development for lower-level-functioning children and youth. You and your organization sent (Mr. Bob, Ms. Beth) Jones to a summer workshop which was to develop trainers or staff development leaders for personnel who work with these lower-level-functioning children and youth. (Mr., Ms.) Jones has completed the workshop and you have asked (him, her) to meet with you and discuss (his, her) approaches for improving in-service (or continuing) education for the ten teachers and ten aides now working in this new program. (Mr., Ms) Jones is now entering your office.

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You are (Mr. Bob, Ms. Beth) Jones. You have worked as a teacher for six months in helping develop and implement a new program for lower-level functioning children and youth. (Mr. John, Ms. Joan) Smith, your supervisor, asked you to attend a workshop at the University which was to train trainers of personnel who work in educational and developmental programs for these children and youth. You have completed the workshop and this is your first day back at work. (Mr., Ms.) Smith has asked you to come in and discuss your new role as trainer for the ten teachers and ten aides now working in this program for lower-level-functioning children and youth. You have just entered (his, her) office.

Role Play Situation No. 2

You are (Mr. Stan, Ms. Sue) Brown. You have recently been appointed as a Staff Development Specialist for all professional and non-professional personnel who work in an educational program for lower-level-functioning children and youth. (Mr. Mark, Ms. Mary) Johnson, President of the Parent organization associated with your program, has asked for an appointment. You are not sure what (he, she) has in mind but will now have this question answered as (Mr. Ms.) Johnson has just entered your office.

- -

You are (Mr. Mark, Ms. Mary) Johnson, President of the Parent organization for mentally retarded children. Many new parents have joined the organization as their children and youth will soon enter an expanded educational program for lower-level-functioning children and youth. You are meeting with (Mr. Stan, Ms. Sue) Brown who is the new Staff Development Specialist for all professional and non-professional personnel involved in this expanded program. (Mr., Ms.) Brown has announced that behavior modification or behavior shaping will be a method of training used with the children and youth. Many parents don't understand this instructional approach. Some are upset as they have read about or heard that extreme punishment is used as a part of this technique. You have been asked to meet with (Mr., Ms.) Brown to find out how this behavior modification or behavior shaping works. You enter (Mr., Ms.) Brown's office.

Role Play Situation No. 3

You are (Mr. Art, Ms. Amy) Jackson. You are the new Director of Education and Training at the State School for mentally retarded. Due to the Right to Education Consent Agreement, you have been assigned responsibility for all education and training programs that serve lower-level-functioning children and youth. In the past, Dr. (James, Jenny) Williams Director of Psychological Services for the school, has had responsibility for comprehensive individual evaluations and has operated a behavior modification program under (his, her) department. (Mr. Larry, Ms. Laura) Philips, Director of Nursing Services had operated a training program for staff and children assigned to (his, her) department. You are about to meet with these two department heads as all training and education programs are now your responsibility. The purpose of the meeting is to discuss how these programs should operate under educational leadership and how the resources of these two departments can best be utilized in the educational program for lower-level-functioning children and youth.

- -

You are Dr. (James, Jenny) Williams, Director of Psychological Services for the State School for the mentally retarded. You have just learned that (Mr. Art, Ms. Amy) Jackson has been appointed Director of Education and Training for the school. The Superintendent's announcement stated that (he, she) would have broad, overall responsibility for all education and training activities that concern lower-level-functioning children and youth. Your department has a behavior modification program in operation that serves these children and youth and has rendered evaluation and other services for some areas of education and training. This is your first meeting with (Mr., Ms.) Jackson since the announcement of (his, her) broader responsibilities. You are anxious to discuss how your department will operate under this new program. (Mr. Larry, Ms. Laura) Philips, Director of Nursing Services will also attend the meeting. (Mr., Ms.) Philips and you enter (Mr., Ms.) Jackson's office.

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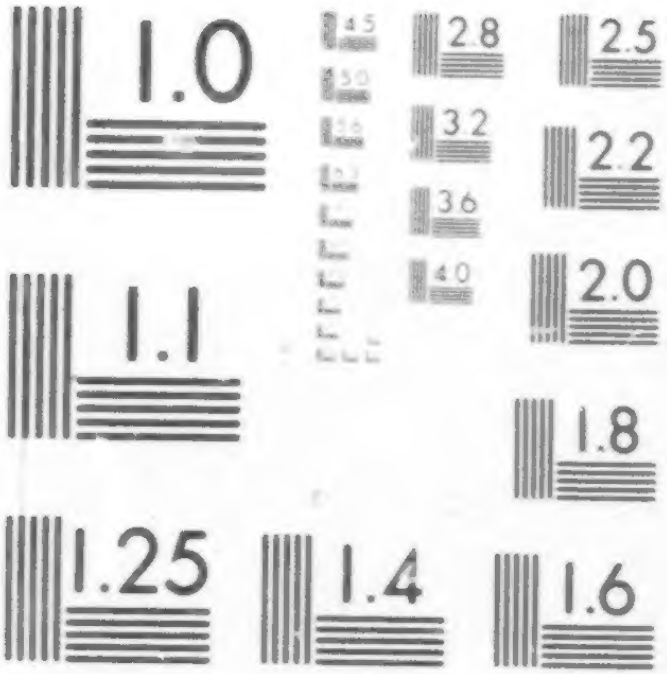
You are (Mr. Larry, Ms. Laura) Philips, Director of Nursing Services at the State School for mentally retarded. You have just learned that (Mr. Art, Ms. Amy) Jackson has been appointed Director of Education and Training for the school. The Superintendent's announcement stated that (he, she) would have broad, overall responsibilities for all education and training activities that concern lower-level-functioning children and youth. Your department has a training program for both staff and these children and youth. This is your first meeting with (Mr., Ms.) Jackson since the announcement of (his, her) broader responsibilities. You are anxious to discuss how your department will operate under this new program. Dr. (James, Jenny) Williams, Director of Psychological Services will also attend the meeting. Dr. Williams and you enter (Mr., Ms.) Jackson's office.



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

SECTION V

OVERVIEW OF AN EXISTING PROGRAM;
WORKSHOP EVALUATION

To broaden the trainees' perspectives and to demonstrate the viability of implementing a program such as had been discussed, Francis P. Kelley, Superintendent of Mansfield Training School, Mansfield Depot, Connecticut, was invited to discuss the program currently operating at Mansfield. The program focuses on the severely and profoundly retarded, and has effected a considerable degree of improvement in the training of these residents. The presentation was supplemented with a slide demonstration.

THE MANSFIELD TRAINING SCHOOL PROGRAM
for
SEVERELY AND PROFOUNDLY RETARDED

Francis P. Kelley
Mansfield Training School

Severely and profoundly retarded individuals comprise more than two-thirds of the Mansfield Training School population. They have very special needs for care and training. It is crucial to understand that their severe handicaps present substantial obstacles to meeting these needs. For example, one of the major obstacles to training is language. For the normal four-year-old child, a parent can say, "This is how you tie your shoes." The child will understand the parent, and can verbally ask for assistance if he needs it. For the severely or profoundly retarded person, the situation is radically different. His ability to understand language is limited or totally non-existent, and his ability to speak may be the same. Thus the language barrier severely impedes the learning of even the most basic skills.

Other major obstacles to training include the following: (1) severe physical handicaps such as blindness, deafness, or paralysis, cranial and cerebral deformities, and congenital abnormalities of every part of the body, especially of the heart, lung, urogenital and intestinal tracts (2) minimal attention span; and (3) interfering maladaptive behaviors.

The extensive training needs of the severely and profoundly retarded range from basics such as learning to eat, in some cases learning to swallow, toilet-training, self-dressing, etc., up to higher level skills such as acceptable social behaviors. Acquisition of these seemingly simple skills is, in reality, a problem of enormous magnitude when considered in light of the above-listed obstacles.

It should be understood that the vast needs and the considerable obstacles to training are part and parcel of the condition of profound retardation. However, successful training in many cases can be achieved with proper conditions and commitment. The minimal requirements for training severely and profoundly retarded individuals include the following: (1) small residential

training units; (2) smaller groups of residents and more individual attention; (3) trained staff with high staff-to-resident ratio; (4) needed material resources such as training devices; and (5) availability of tested training methods and professional staff consultation. Armed with these facilities and services, the dedicated staff can produce significant training achievements with the majority of the severely and profoundly retarded persons.

Following is a synopsis of the program as implemented at Mansfield, a program which is known as the TEAM APPROACH CONCEPT TRAINING (TACT).

The TACT program at Mansfield began in September, 1970. This program was made possible through the efforts of the National Association for Retarded Children, the United Cerebral Palsy Association, and the Department of Health, Education, and Welfare. The Superintendent authorized four specialists from Mansfield to attend a month-long pre-training program at Central Wisconsin Colony during late July and early August. The training received was designed to be implemented at the Training School. The TACT program includes such specialists as physicians, physical therapists, nurses, occupational therapists, and direct care personnel.

Since it was believed to be important to give the residents an opportunity to experience success, goals were set within the range of possibility for them. This meant being very realistic about what the residents were going to be able to achieve, and observing every increment of success.

Initially, an In-Service Training program was provided for hospital personnel; later it was provided to persons working in cottage-life areas. The program which was a combination of new plans and goals, up-dating of programs, and a review of previous material, was presented in two-hour sessions, seven times a week for a period of ten weeks. Classes were held on all three shifts. Similar continuing education could be scheduled for parents.

Ward conferences were established and held at the end of the first shift and at the beginning of the second shift involving direct care personnel, the attending physician, the TACT team, and other disciplines as needed. Recommendations were made regarding which professional or paraprofessional might best handle the type of programming needed.

Implementation of the recommendations is often a dual function with a physical therapist instructing and training direct care personnel in the techniques or procedures to be followed in the development of the individual toward his goals - his maximum level of achievement. As programs were implemented, follow-up conferences also were scheduled.

Visiting Consultants, Una Haynes, Nurse Consultant and Program Director for United Cerebral Palsy, and Patricia McNelly, Director of Nursing at Central Wisconsin Colony, gave much needed advice and ideas on areas to be strengthened. Even though these residents are severely and profoundly retarded, they do have a capacity for improvement.

The Foster Grandparents have been involved with many of our other residents, in order to give them the personal attention and stimulation that aides are sometimes unable to provide. Foster Grandparents also have been of great assistance in feeding programs.

Under the guidance and control of Occupational Therapy, individual feeding programs have been developed by the team. Two eye-tracking machines, one portable and one stationary, were constructed by Occupational Therapy personnel to increase eye control. As many as 35 pieces of adaptive equipment are made each month in this department.

The team also stresses a continuity of care, with aides assigned to the same residents each time they work, limiting the number of people to whom the child must adjust.

Starting in the Fall of 1971, new areas of involvement were selected. Merritt Hall houses 35 mildly- to severely-retarded women between the ages of 23 and 70. Much of their day was spent in inactive sitting because there were few idle-hour activities. Residents soon became involved with volunteers, senior citizens, and music therapy during the day. Hopefully, there will be more volunteers and senior citizens in the evenings, but in the meantime, the staff shows movies, and a story hour has been set up which provides reading to a group of residents. Through ward conferences involving personnel from the first and second shifts, programs were developed for each resident. Recommendations were made for improving employee work performances and increasing privacy for the residents during bathing. A record player, which was purchased with funds from a candy sale, promoted group interaction through Sing-Alongs. Thanks to the cooperation of many department, enough money also was realized from candy sales to purchase a television and radio for the area. We plan to use these as tools for education programs and a better awareness of the real world.

Bennett Hall houses adolescent boys of all levels of retardation. Behavior shaping and leisure time activities are their main needs. Employees have accepted and implemented suggestions for ward activities. College and church groups have become very active volunteers.

Campbell Hall houses 140 male residents who are severely and profoundly retarded. Nine of these continually lie in bed or reclining chairs. Another 50 sit in geriatric chairs which were too large for them. Concentration was put on adapting chairs so residents would be comfortable and sit upright.

Under the sponsorship of United Cerebral Palsy Association Consultant Anita Slominski, Occupational Therapist from the University of Indiana Medical Center, recommended drinking through a straw, and suggested adaptive equipment for those positioned in reclining chairs.

The use of mats, which were donated by a church, has been emphasized as Occupational Therapy students from Manchester Community College also carried out programs for these residents. All new employees in the In-Service Training classes were involved in on-the-job feeding programs in Campbell Hall. Here, 26 trays, made by Occupational Therapy, were put on chairs to facilitate hand-use and to attain better sitting position. Since the initiation of the

project direct-care personnel have been found to possess more awareness of the potential of residents, and have been more responsive to suggestions from the team as they demonstrated a continuing interest in improvements.

As community acceptance was achieved, there were requests to speak to various interest groups. These include the United Cerebral Palsy Association of Connecticut, the Ladd School in Rhode Island, the Annual Convention of the Massachusetts Association for Retarded Children, in addition to the American Association on Mental Deficiency Region X Conference, classes at the University of Connecticut, the Manchester Community College, and the E. O. Smith and Windham High Schools. Thus there has been opportunity to present and discuss our programs for the multiply-handicapped, severely and profoundly retarded.

From the TACT team project many disciplines have learned to work together for a common goal, each growing in their own profession, and gaining new knowledge from the others. Teaching abilities have increased, and, as communication improved, there has been increased awareness of others' roles and problems. Staff members have become more aware of the residents' individualities, needs and potential, and through this awareness have become more concerned and involved with the residents' programs. Parents, parent groups, and professional staff from many settings have learned about the TACT project through informal sessions, seminars, and workshop programs held during the two years. The response has indicated a tremendous desire for more information and training in meeting the many needs of the multiply-handicapped mentally retarded.

Actually, the TACT team represents a new approach to old problems. The before-and-after slides which have been shown reveal to the layman no earth-shattering success - but they show progress. Where a child had lain passive, he sits in a wheelchair; where he had exhibited a severe head-thrust, he is in midline; where he had been a dependent feeder, he uses a spoon; where he had been attired in diapers, he is dressed; where his feet hung flaccid, they are on foot rests; where he slumped in a chair, he sits, positioned properly for circulation and breathing. Our goal is optimum development for every child. No-one really knows just what that optimum potential is. Our work is just a beginning.

APPRAISAL OF THE WORKSHOP AND EVALUATION OF THE TRAINING MODEL

Marvin Malcotti
Pennhurst State School

Each participant engaged in an appraisal sequence which utilized daily evaluation sheets and a final appraisal form (see Appendix C). These forms were designed to determine the effectiveness and the value of the workshop.

The end-of-the-day evaluations, which were completed by each of the six workshop groups, served as a means of assessing and improving the on-going program. The needs expressed by the groups were met by adding additional speakers and rearranging scheduled activities. Thus programming flexibility was planned which provided an individualized approach. The groups

could see that their suggestions were being heard and acted upon. This two-way communication throughout the workshop enriched and improved the program and served as an important means whereby the Directors could assess the climate among the workshop participants. Were the lectures understood? Were they relevant? Could the participants implement what they learned? Were there any specific problems? These issues were constantly evaluated by the Directors based on the daily and weekly evaluations.

Protocols from the initial and final appraisal forms were tallied in order to facilitate evaluation of the workshop. Table 6 presents the results of this tally. The data reflect the fact that the workshop met a majority of the expressed needs, particularly in the areas of assessment and programming. Over 30% responded that there were no unmet needs, while items which were listed as unmet needs seemed to relate to specific job-related situations. In addition, the evaluation forms provided suggestions for subsequent workshops, namely a similar workshop geared toward (1) the older handicapped child, (2) appropriate classroom materials and resources, (3) educational program management and funding, (4) specific self-help problems and behavioral disorders, (5) an in-depth exploration of and practice in each of the areas presented in the current program, and (6) the non-ambulatory and blind-deaf mentally retarded person.

TABLE 6

TALLY OF FINAL EVALUATION FORMS

Pre-workshop Needs		Post-workshop Needs	
Item	# of p.	Item	# of p.
Techniques for programming for multiply handicapped M/R	56	No unmet needs	17
Ideas for In-service training	37	More information on crib-bound	7 *
Techniques of behavior management	18	More information on blind/deaf M/R	4 *
Knowledge of and experience with low-functioning M/R	39	More on PT/OT	1 *
Techniques for dealing with parents	14	More information on administration and supervision	2
Resources and references pertinent to multi-handicapped	25	More information on normal growth and development	1 *
Self-confidence	14	More information on trainer's role in own job	2
Ideas regarding program administration	10	No. leaving question blank	30
Evaluation techniques (child)	45		
Ways of dealing with others' attitudes	12		

* = one individual lists each of these 4 needs

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Wood, Nancy E. Verbal learning. San Rafael, Calif.: Dimensions Publishing Co., 1969.

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Wright, Betty A. Teacher aides to the rescue. New York: John Day Co., 1969

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APPENDIX A

WORKSHOP MATERIALS

1. TEXTS

Bensberg, Gerard J. (Ed.) Teaching the mentally retarded. Atlanta, Ga.: Southern Regional Education Board, 1965.

Patterson, Gerald R., and Gullion, M. Elizabeth. Living with children. Champaign, Ill.: Research Press Co., 1971.

Stephens, Beth (Ed.) Training the developmentally young. New York: John Day Co., 1971.

2. FILMS

As the Twig is Bent. University of Wisconsin Instructional Materials Center, Madison, Wisconsin.

A discussion and demonstration of a training project carried out at Central Wisconsin Colony and Training School. Subjects involved in the project were severely and profoundly retarded children.

I'm Ready, Mom; Are You? Exceptional Children's Foundation, 2225 West Adams Boulevard, Los Angeles, California.

An introduction to toilet training aimed at parents.

Step Behind Series. Hallmark Films and Recordings, Inc., 1511 E. North Avenue, Baltimore, Md.

a. Genesis: A behavior modification approach to teaching the self-help skills of dressing, eating, and toileting.

b. Ask Just for Little Things: A behavior modification approach to teaching ambulation, personal hygiene, and attending behaviors.

c. I'll Promise You a Tomorrow: Communication, direction-following, and group participation are developed and fostered through the use of behavior modification techniques.

Testing the Multiply-Handicapped: United Cerebral Palsy Association, Inc., 321 W. 44th St., New York.

An educational evaluation of three severely handicapped children: one is cerebral palsied (athetoid), another is blind and deaf, and the third is hyperactive and distractible. The Haeussermann test is used.

3. HANDOUTS

Baumgartner, Bernice. Comprehensive Continuum of Services: "Low Functioning?" "Case Study - An ESEA Title I Success Story" "Infant and Toddler Projects" "Toilet Training - Instructional Information". Harrisburg, Penna.: Pennsylvania Office of Right to Education, 1968.

Delp, Harold. Revised record blank, Vineland Social Maturity Scale by Edgar Doll. Circle Pines, Minn.: American Guidance Service, 1968.

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McDonald, Eugene. Understanding parents' feelings. Reprint available from: National Society for Crippled Children and Adults, 2023 W. Ogden St., Chicago, Illinois.

McDowell, Floyd. Proposal for program in development and adaptive behavior for lower level functioning mentally retarded. Devon, Penna.: Human Development Resources, 1971.

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Pennsylvania Office of Right to Education. Commonwealth plan for identification, location, and evaluation. Harrisburg, Pa., 1972.

Pennsylvania Office of Right to Education. Commonwealth right to education evaluation form (Referral/placement master). Harrisburg, Pa., 1972.

Pennsylvania Office of Right to Education. Commonwealth plan for education and training. Harrisburg, Pa., 1972.

Pennsylvania Office of Right to Education. Pennsylvania right to education consent agreement. In Pennsylvania Message, 1972, 8, 1. Harrisburg, Pa.: Pennsylvania Association for Retarded Children.

Ross, Robert. Fairview problem behavior record. Research Department, Fairview State Hospital, 2501 Harbor Boulevard, Costa Mesa, California, 1971.

Rousseau, Frank. Behavioral assessment - Reinforcement conditions. Behavioral Programming in the Re-education School, a project of The Information and Dissemination Office, Tennessee Re-education Program, Tennessee Department of Mental Health, 1971.

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Stephens, Beth. Piaget's stages of intellectual development. In Beth Stephens (Ed.) Training the developmentally young. New York: John Day Co., 1971, p. 48

Tait, Perla. The effect of circumstantial rejection on infant behavior. The New Outlook, 1972.

Valett, Robert. Valett developmental survey of basic learning abilities. Palo Alto, Calif.: Consulting Research Press, 1966.

Watson, Luke. Application of operant conditioning techniques to institutionalized severely and profoundly retarded children. Paper presented at American Psychological Association, Chicago, 1965. Available through Eastern Pennsylvania Regional Resources Center, King of Prussia, Pennsylvania.

4. RESOURCE BOOKS

(A central library of pertinent books was maintained at the lecture site. These books were available for the trainees' use on a one-night loan basis.)

Blessing, Kenneth. A potpourri of ideas for teachers of the mentally retarded, Vol. I, Arts and Crafts. Madison, Wisconsin: Wisconsin State Department of Public Instruction, 1966.

Connor, F., and Talbot, M. An experimental curriculum for young retarded children. New York: Teachers College, Columbia University, 1966.

Haeussermann, Else. Developmental potential of pre-school children - An evaluation of intellectual, sensory, and emotional training. New York: Grune & Stratton, 1958.

Karnes, Merle. Helping young children develop language skills. Arlington, Va.: Council for Exceptional Children, 1968.

Larson, L., and Bricker, W. A. A manual for parents and teachers of severely and moderately retarded children. IMRID Papers and Reports, Vol. 5, No. 22. Nashville, Tenn.: IMRID, George Peabody College, 1968.

McCarthy, James, Stevens, Harvey, and Billingsley, James. Program development for severely retarded institutionalized children. Madison, Wisc.: University of Wisconsin, 1969.

McDowell, Floyd. A training outline for child care trainees who work with lower level functioning mentally retarded children. Developed for the Office of Mental Retardation, Department of Public Welfare, Harrisburg, Penna., by Human Development Resources, Devon, Penna., 1972.

Malloy, Julia. Teaching the retarded child to talk. New York: John Day Co., 1961.

Reporting Service for Children. TMR performance profile for the severely and moderately retarded. Ridgefield, N. J.: Reporting Service for Children, 1963.

APPENDIX B

MATERIALS AVAILABLE
from
United Cerebral Palsy Associations, Inc.
66 East 34th Street
New York, N. Y. - 10016

Infant Programs

Publications:

HANDLING THE YOUNG CEREBRAL PALSIED CHILD AT HOME, N. Finnie
Paperback book: Guide to parents, nurses, therapists, and others - $ 2.75

A DEVELOPMENTAL APPROACH TO CASEFINDING, U. Haynes. Pamphlet; published by U. S. Children's Bureau. Guide to professionals in identification of young children suspected of having cerebral palsy, mental retardation and related disorders. Includes "Wheel" of Developmental Milestones. $ 1.25

INTERDISCIPLINARY PROGRAMMING FOR INFANTS WITH KNOWN OR SUSPECTED CEREBRAL DYSFUNCTION. Western Interstate Commission for Higher Education. Brochure reporting proceedings of a Conference $ 1.00

Slides:

Kit of 2" x 2" slides - 70 in all - explaining philosophy and techniques, plus illustrations of procedures in several infant programs; with explanatory tape and script. Purchase - $15.00

Also available on loan basis.

Programs for Adults

Publications:

OPENING NEW DOORS TO CEREBRAL PALSIED THROUGH DAY CARE AND DEVELOPMENTAL CENTER. E. D. Helsel, S. A. Messner, L. Reid. Guide for affiliates to develop programs outside the home for severely disabled. Physical facilities, fees, programs for children and adults, staffing, bibliography No Charge

Report of Conference on Life Enrichment Needs of Persons with Multiple Handicaps.

Films:

THE HURRICANE INSIDE - Color - 15 minutes - Loan; or sale at - $75.00

This film depicts the many treatments and services available to the cerebral palsied. Filmed in California, it focuses on the successful cerebral palsy workshop run by UCP of Orange County and the therapy given at the UCLA Rehabilitation Center, stressing how the physical, educational, vocational, and emotional needs of the handicapped are met in these and other UCPA centers throughout the country.

WHEN MAY COMES, WE'LL MOVE TO THE FIRST FLOOR - B&W, 22 minutes
Loan, or sale at $65.00

This sensitive film details the limited world of a severely involved cerebral palsied young woman. A voice-over narration based on the girl's own diary lets us know of the frustrations, hopes and fears she experiences and of her growing concern over her aging mother who devotes her life to caring for her handicapped daughter. An extremely human document, the film gives the viewer a close hard look at the thoughts and feelings of one individual member of a large segment of our society.

Slides:

Four kits of slides illustrating components of a program for severely handicapped teenagers and adults; with general introduction which can be used with each kit singly or with all four together. About 25 slides in each kit plus 15 in the introduction.

Single kits with introduction each - $10.00
Package of all kits $30.00

Includes tapes and script
Also available on a loan basis

Titles of Individual Kits:

Recreation
Independent Living
Educational Experiences
Work Activities

All materials listed are available from:

United Cerebral Palsy Associations, Inc.
66 East 34th Street
New York, New York - 10016

APPENDIX C

APPRAISAL FORMS

Initial Appraisal

1. What are your needs in working with or training others to work with mentally retarded children?

2. What are your expectations for this workshop?

3. List questions you have which you hope can be answered during this workshop.

4. In terms of your present/future position as a trainer, what do you see as your primary need at this point?

Reaction of Participants to Daily Program

1. List what you learned from today's program which will help you in training personnel to work with mentally retarded.

2. What unanswered questions do you have, based on today's program?

3. Additional comments and/or suggestions.

Final Appraisal

1. A. List your needs in working with or training others to work with mentally retarded children which were met by the workshop.

   B. Which were not met?

2. A. Which of your expectations for the workshop were met?

   B. Which were not met?

APPENDIX D

Participants in the Workshop

Name	Agency
James Armstrong	School District of Philadelphia
Marie Bass	School District of Philadelphia
Sara Jane Binder	Haverford State Hospital
Carolee Booth	Bucks County Public Schools
Naomi Boyer	Jones Memorial Human Services
Margaret Brlansky	Ebensburg State School and Hospital
Barbara Bruce	Temple Mental Health Center
Pamela Cherry	Bristol Township Public Schools
Nancy Clark	Intermediate Unit #19
Donavon Cobb	Intermediate Unit #14
Leslie Cronin	Intermediate Unit #24
Veronica D'Annibale	Hamburg State School
Constantine P. DiVito	Bok Vocational School
Geraldine Eichenlaub	Cresson State School
Margaret Gallagher	Beaver Valley Intermediate Unit
William Genz	Norristown State Hospital
Sandra Gottlieb	Norristown State Hospital
Helen Greene	School District of Philadelphia
Joan Henry	Bristol Township Public Schools
Marilyn Hill	School District of Philadelphia
Phyllis Horn	School District of Philadelphia
Barbara Howerton	School District of Philadelphia
Judy Jenkins	Selinsgrove State School and Hospital
Howard Jennings	School District of Philadelphia
Fred Jones	Hahnemann Medical College and Hospital
Sandra Joyner	Temple Community Mental Health Center
Carol Keating	United Cerebral Palsy Association
Phyllis Keliher	Intermediate Unit #17
Kathleen Kennedy	Cresson State School and Hospital
Anna Krysa	Pennhurst State School and Hospital
Francine Leof	Ken-Crest Centers for Exceptional Persons
Margaret Lovejoy	School District of Philadelphia
Blanch M. Lynch	Lynch Home
Evelyn Lynch	Lynch Home
Marianne Lynch	Lynch Home
Timothy McBride	Somerset State Hospital
Nancie McDermott	Delaware County Intermediate Unit
Edward McLaughlin	Philadelphia State Hospital
Joan Maggio	Embreeville State Hospital
Teresa Matsko	White Haven State School and Hospital
Ruth May	Polk State School and Hospital
Terry Morris	Meadville City Hospital and MH/MR Center
Jack Nussen	Ebensburg State School and Hospital

Name	Agency
Cynthia Painter	School District of Philadelphia
John Price	Price Home for Children
Judy Printz	Westmoreland County MH/MR Office
Thomas Ross	Council Rock School District
Todd Salkeld	Ebensburg State School and Hospital
Pamela Samuels	State Office of Mental Retardation
Lynn Schollenberger	Berks County Schools
Barbara Schubauer	Ken-Crest Centers for Exceptional Persons
John Shively	Laurelton State School and Hospital
Gladys Simmons	Southeastern Region Office of MH/MR
Ellen Simpson	Eastern State School and Hospital
Henry Vernon, Jr.	Selinsgrove State School and Hospital
Agnes Whitman	State Office of Mental Retardation
Janet Wright	School District of Philadelphia

APPENDIX E

STAFF

Co-Directors

Marvin Malcotti, Pennhurst State School

Dianne Manfredini, Philadelphia Association for Retarded Children

Beth Stephens, Temple University

Assistant Directors

George Gladis, Vanguard Schools, Paoli, Pennsylvania

Dona Gordon, Western Michigan University

Patricia Murray, Montgomery County Intermediate Unit

Edith Nemeth, Elwyn Institute, Elwyn, Pennsylvania

Ruth Sower, Temple University

David Wood, Philadelphia Association for Retarded Children

Administrative Assistants

Lucia G. Kres, Temple University

Susan J. Robb, Temple University